

Science Final Revision

1 Choose the correct answer:

Attempts of Elements of Classification

1. The number of elements in Earth's crust equals
a 92 **b** 118 **c** 120 **d** 123
2. The scientist added group zero in his table for noble gases.
a Mendeleev **b** Mosely **c** Bohr **d** Rutherford
3. The scientist had discovered the main energy levels.
a Mendeleev **b** Mosely **c** Bohr **d** Hoffman
4. The main energy levels discovered by Bohr in the atom are
a 3 **b** 5 **c** 7 **d** 9
5. The modern periodic table contains elements.
a 26 **b** 92 **c** 100 **d** 118
6. P-block contains groups.
a 2 **b** 6 **c** 8 **d** 10
7. The atomic number of an element equals
a the sum of neutron number inside the nucleus.
b the sum of the number of electrons which rotate in the energy levels.
c the number of protons inside the nucleus.
d Both (b) and (c) are correct.
8. The atomic number of an element that exists in group (7A) and period (2) is
a 12 **b** 7 **c** 9 **d** 17
9. Which of the following elements is located in the third period?
a K_{19} **b** C_6 **c** P_{15} **d** Li_3
10. Elements in the same period in the modern periodic table have the same
a atomic number **b** number of energy levels
c number of electrons in their outermost energy level
d valency
11. The element, whose atomic number is 15 has similar chemical properties as the element whose atomic number is
a 17 **b** 19 **c** 5 **d** 7
12. The inert gas that has the same electronic structure as Na^+ is
a Ne_{10} **b** He_2 **c** Ar_{18} **d** Cl_{17}
13. The transition elements start to appear from the beginning of the period.
a first **b** second **c** third **d** fourth

Graduation of Properties of Elements in the Modern Periodic Table

14. is the lowest metallic element in group (1A).
 a Na b Cs c K d Li
15. The oxide which dissolved in water and produces an acid is
 a CO_2 b CuO c MgO d FeO
16. Metal oxides are oxides.
 a acidic b basic c both of them d no correct answer
17. Which of the following is an acidic oxide?
 a CO_2 b MgO c Na_2O d FeO
18. Each period in the modern periodic table starts with a/an
 a metal b nonmetal c metalloid d inert gas
19. react with water instantly and hydrogen gas evolves.
 a K and Na b Zn and Fe c Ca and Mg d Cu and Ag
20. Which of the following elements doesn't react with water?
 a K and Na b Zn and Fe c Ca and Mg d Cu and Ag
21. The atomic radius is measured in
 a nanometer b picometer c centimeter d millimeter

Main Groups in the Modern Periodic Table

22. The gas which evolves on reacting alkali metals with water is
 a nitrogen b hydrogen c helium d oxygen
23. When sodium reacts with water gas evolves.
 a nitrogen b hydrogen c helium d oxygen
24. Elements of group (7A) are known as
 a alkali metals b alkaline Earth metals c halogens d inert gases
25. is considered from halogens.
 a Sodium b Chlorine c Helium d Calcium
26. Which of the following is a radioactive element which is used in food preservation?
 a Liquid sodium. b Liquefied nitrogen. c Cobalt 60. d Water.
27. Which of the following is the halogen that exists in a solid state?
 a Fluorine b Chlorine c Bromine d Iodine

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Water

28. There are bonds between water molecules.
a ionic **b** covalent **c** hydrogen **d** metallic
29. The volume of hydrogen gas evolving from water electrolysis is the volume of oxygen gas.
a equal to **b** double **c** half **d** 4 times
30. The density of ice is the density of water.
a equal to **b** greater than **c** less than
31. is a polar compound.
a Petrol **b** Alcohol **c** Water **d** Methane
32. Ice crystals have shape.
a triangular **b** tetragonal **c** pentagonal **d** hexagonal
33. Bilharzia is from the harms resulted from water pollution.
a thermal **b** biological **c** radiant **d** chemical
34. Eating fish, which contain high concentration of causes the death of brain cells.
a mercury **b** arsenic **c** lead **d** iron
35. Water has high boiling point due to the presence of bonds between its molecules.
a hydrogen **b** ionic **c** covalent **d** metallic
36. When putting a glass bottle completely filled with water in the freezer, it breaks because when water freezes, its increases.
a temperature **b** density **c** acidity **d** volume
37. What is the volume of hydrogen gas evolved gas from electrolysis of acidified water if you know that the volume of oxygen gas evolved is 2 cm^3 ?
a 1 cm^3 **b** 2 cm^3 **c** 4 cm^3 **d** 6 cm^3
38. All of the following are from the properties of water except
a It is neutral on both litmus paper. **b** Analysis by heat.
c It increases in volume by heating **d** It is a polar compound.

The Atmospheric Layers

39. Meteors burn in layer.
a thermosphere **b** stratosphere **c** ionosphere **d** mesosphere

40. The coldest layer of the atmosphere is
a thermosphere **b** stratosphere **c** ionosphere **d** mesosphere
41. The normal atmospheric pressure at the sea level equals millibar.
a 1013.25 **b** 101.325 **c** 10.1325 **d** 1.013
42. The first layer of the atmosphere above sea level is
a thermosphere **b** stratosphere **c** troposphere **d** mesosphere
43. Satellite orbit in the layer.
a thermosphere **b** stratosphere **c** exosphere **d** mesosphere
44. is located between stratosphere and mesosphere.
a Tropopause **b** Stratopause **c** Mesopause **d** Thermopause
45. The atmospheric envelope is inserted into outer space in a region called
a exosphere **b** stratopause **c** ionosphere **d** mesopause
46. Ionosphere layer is surrounded by two belts.
a electric **b** magnetic **c** ionic **d** elastic
47. The air in the troposphere layer moves
a horizontally **b** vertically **c** diagonally
48. The second layer of the atmosphere above sea level is
a thermosphere **b** stratosphere **c** troposphere **d** mesosphere
49. The device that is used for determining the elevation from sea level is
a aneroid **b** altimeter **c** speedometer **d** thermometer
50. The atmospheric pressure on the top of a mountain is the atmospheric pressure at the sea level.
a equal to **b** greater than **c** less than

Ozone Erosion and Global Warming

51. One Dobson is defined as
a 0.01 mm **b** 0.1 mm **c** 3 mm **d** 300 mm
52. All of the following are greenhouse gases except
a CO₂ **b** O₂ **c** N₂O **d** CH₄
53. The degree of ozone layer is measured by a unit called
a nanometer **b** nm **c** Dobson **d** km
54. Ozone layer is found in layer.
a thermosphere **b** stratosphere **c** ionosphere **d** mesosphere

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55. is/are used to preserve agricultural crops.

- ☐ a Methyl bromide gas
- ☐ b Nitrogen oxide
- ☐ c Halons
- ☐ d Chlorofluorocarbon compounds

56. All of the following are ozone pollutants except

- ☐ a CO₂
- ☐ b methyl bromide gas
- ☐ c halons
- ☐ d CFC_s

57. is/are used in extinguishing fires.

- ☐ a Halons
- ☐ b methyl bromide gas
- ☐ c halons
- ☐ d CFC_s

Fossils

58. Fossils are preserved (often found) in rocks.

- ☐ a igneous
- ☐ b sedimentary
- ☐ c metamorphic
- ☐ d volcanic

59. Which of the following fossils indicates that the environment where they lived was clear, warm, and shallow seas?

- ☐ a Nummulites fossils.
- ☐ b Ferns fossils.
- ☐ c Coral fossils.
- ☐ d Ammonites fossils.

60. Complete body fossils of insects are found preserved in

- ☐ a snow
- ☐ b amber
- ☐ c oil
- ☐ d soil

61. Mammoth fossils are found preserved in

- ☐ a snow
- ☐ b amber
- ☐ c oil
- ☐ d soil

62. Which of the following fossils indicates that the environment where they lived was a hot and rainy tropical environment?

- ☐ a Nummulites fossils.
- ☐ b Ferns fossils.
- ☐ c Coral fossils.
- ☐ d Ammonites fossils.

63. Which of the following fossils play an important role in petroleum exploration?

- ☐ a Nummulites and ammonites.
- ☐ b Foraminifera and trilobite.
- ☐ c Foraminifera and radiolaria.
- ☐ d Coral and ferns.

64. The replaces the wood material, part by part of an old tree.

- ☐ a plastic
- ☐ b copper
- ☐ c iron
- ☐ d silica

65. is an example of microfossils.

- ☐ a Fern
- ☐ b Coral
- ☐ c Nummulites
- ☐ d Foraminifera

66. From the complete body fossils is fossils.

- ☐ a nummulites
- ☐ b ammonites
- ☐ c mammoth
- ☐ d fish

Extinction

67. protectorate is the first protectorate to be established in Egypt.

- ☐ a Ras Mohamed
- ☐ b Wadi Hetan
- ☐ c Petrified forests
- ☐ d Panda

68. From the endangered species is the
 a dinosaur b bald eagle c dodo bird d quagga
69. is one of the most important causes of extinction in the recent ages.
 a Volcanic eruption. b Falling of meteorites.
 c Over-hunting and environmental pollution. d Falling of icebergs.
70. protectorate is a natural protectorate in USA where grey bear is protected.
 a Ras Mohamed b Wadi Hetan c Bluestone d Panda
71. All of the following are from endangered species except
 a bald eagle b quagga c papyrus plant d rhinoceros
72. From the extinct species is
 a bald eagle b dodo bird c papyrus plant d rhinoceros

2 Complete each of the following sentences:

1. Most of weather phenomena happen in layer.
2. Transition elements appear from period number in the modern periodic table.
4. The ozone layer doesn't allow the penetration of all ultraviolet rays.
5. is an example of polar compounds.
7. Fluorine and chlorine exist in state.
8. is from the negative effects of global warming phenomenon.
9. Atomic size is measured by, while atmospheric pressure is measured by
10. Ultraviolet radiation has a effect while infrared radiation has a effect.
11. Eating fish which contain high concentration of lead causes but drinking water which contains high concentration of mercury leads to
12. The highest-temperature (hottest) layer of the atmosphere is and the least-temperature (coldest) layer is
13. Basic oxides are oxides and their solutions turn the litmus solution into
14. Alkali metals are good conductors of and
15. The height of atmospheric envelope above sea level is km, while the normal pressure equals millibar.
16. $\text{CO}_2 + \text{H}_2\text{O}$
16. $\text{Br}_2 + 2\text{KI}$ +
18. Moseley arranged elements ascendingly according to, while Mendeleev arranged

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elements ascendingly according to

19. Dodo bird is bird, while bald eagle is bird.

21. There are bonds between water molecules.

22. The modern periodic table consists of horizontal periods and vertical groups.

23. By increasing the atomic number in groups, the atomic size due to the number of

24 and are examples of polar compounds.

25. The valency of alkali metal elements is

26 and are endangered species .

27. Pure water boils at and freezes at

28. From the reason of extinction are and

29. The strongest metallic element is found in group

30. The thickness of the mesosphere layer is about km.

52. The thickness of stratosphere is, while that of mesosphere is

31. and are considered from ozone layer pollutants.

32. The normal atmospheric pressure at sea level equals mb.

34. Elements in group, (1A) are called alkali metals as their elements react with forming solutions.

36. By increasing the atomic number, the metallic property in the groups of the periodic table.

37. Fluorine and chlorine exist in state, while iodine exists in state.

39. Elements that locate in the middle of the periodic table are called

43. The transition elements start to appear from the beginning of the period and symbolized by the letter

44. The bond between hydrogen atom and oxygen atom in water molecule is bond, while bonds among water molecules are bonds.

46. The ultraviolet rays are three kinds which are,, and.

47. Sodium is kept under the surface of so as not to react with

49. Archaeopteryx represents the link between and

50. Elements of s-block are located on the side of the periodic table and they are arranged in groups.

53. Moseley put and series below the periodic table.

54. The valency of alkali metal elements is

55. Fossils are used in exploration and determination the age of
56. Fossils always exist in the
58. "d" block elements are called the elements.
59. and are from greenhouse gases.
60. Cobalt 60 has the ability to kill
61. and are from ozone layer pollutants.
62. The strongest nonmetal lies in group
63. When the atomic number increases in the same period, the metallic property
64. The safe areas established to protect endangered species are called
65. $\text{MgO} + \text{H}_2\text{O}$
66. The satellites rotate around the Earth in layer.
67. is from the examples of polar compounds because the difference in electronegativity between its elements is relatively
71. During the electrolysis of acidified water by Hoffman's voltameter, the gas evolves at the anode, while the gas evolves at the cathode.
72. The number of groups in p-block is in modern periodic table.
73. Sodium reacts with water to produce gas.
76. Most of weather features occur in layer.
77. Both sodium (Na_{11}) and potassium (K_{19}) are located in the same because they have the same number of
78. Radiolaria fossil is an example of, but amber fossil is an example of
79. is an instrument used to determine the possible day weather, while is used for the analysis of water by electricity.
80. Number of elements in Mendeleev's periodic table is
81. The angle between water molecules is

3 Write the scientific term for each of the following:

1. The continuous decrease in the number of a certain species of living organisms, without compensation until they all die out. _____
2. Traces and remains of old living organisms that are preserved in the sedimentary rocks. _____
3. Safe places that are specified to protect the endangered species in their homeland. _____

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4. A charged atmospheric layer that reflects radio waves.
5. The ability of the atom in a covalent molecule to attract electrons of the chemical bond towards itself.
6. Replacing part by part the wood material of the trees by silica to form petrified fossils.
7. The continuous increase in the temperature of the Earth's near-surface air.
8. The region between stratosphere and mesosphere at which the temperature remains constant.
9. The halogen which exists in a liquid state.
10. The death of all members of a certain species of living organisms.
11. A type of ultraviolet radiations that penetrates the ozone layer by a percentage of 100%.
12. A type of ultraviolet radiations that is absorbed (95%) by the ozone layer.
13. A type of ultraviolet radiations that is absorbed completely (100%) by the ozone layer.
14. The weight of an air column of an atmospheric height above a unit area.
15. One of components of the atmosphere that its percentage increased in recent years causing the greenhouse phenomenon.
16. A table in which the elements are arranged according to their atomic numbers and the way of filling the energy sub-levels with electrons.
17. It is a series in which metals are arranged in a descending order according to their chemical activity.
18. Addition of any substance to water which causes continuous gradual change in water properties affecting the health and the life of living creatures.
19. It is the solidified resinous matter which was secreted by pine trees in old geologic ages.
20. Metals are arranged descendingly according to their chemical activity.
21. The apparatus which is used in water electrolysis.
22. A unit used for measuring ozone degree.
23. The death of all members of a species of living organisms.
24. A bond that exists between water molecules.

25. The horizontal rows in the modern periodic table.
26. The radioactive element which is used in food preservation.
27. The decrease in the thickness of ozone layer.
28. The separating region between troposphere and stratosphere.
29. The gas which is collected at the cathode in water electrolysis.
30. The semi-conductor element which is used in electronics industry.
31. A liquid metal acts as a heat conductor in nuclear reactors for generating electricity.
32. The kind of bond which binds oxygen atom with hydrogen atom in water molecule.
33. A phenomenon that occurs due to the increase in the percentage of CO_2 gas.
34. A layer which plays an important role in wireless communications.
35. A phenomenon that appears as brightly colored light curtains seen at both poles of the Earth.
36. The block that contains the series of lanthanides and actinides.
37. The atmospheric layer in which the air moves vertically.
38. The strongest metal in group (1A).
39. Fossils of living organisms lived for a short time in the past in a wide geographical range then became extinct.
40. A unit that measures the degree of ozone.
41. The elements that occupy the middle block (d) in the periodic table.
42. An area where the atmospheric envelope is inserted in outer space.
43. Elements where their valency shell contains more than four electrons.
44. A molecule produced from the union of an oxygen atom and its molecule.
45. A bond that exists between water molecules.
46. A device used to measure the elevations above sea level.
47. The product of dissolving nonmetallic oxides in water.
48. Weak electrostatic attraction that arises between the molecules of the polar compounds.
49. The measuring unit of the atomic size of an element.
50. The number of protons inside the nucleus of an element.
51. The halogen which exist in a solid state.

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52. The scientist who discovered that the atom contains positive protons in the nucleus.
53. Elements which have properties of metals and nonmetals.
54. Two magnetic belts surrounding ionosphere and play an important role in scattering harmful charged cosmic radiations.
55. The apparatus used for water electrolysis.
56. A mammal between horse and zebra that became extinct recently due to over-hunting.

4 Correct the underlined words:

1. The elements of block (P) are organized in 10 groups in periodic table.
2. Rutherford discovered the main energy levels.
3. The elements with the same physical and chemical properties have been put in horizontal periods.
4. Mendeleev arranged the elements according to their atomic number.
5. Elements of p-block are organized in two groups.
6. Each period in the periodic table starts with an inert gas.
7. An element which is located in the 3rd period and group (2A), its atomic number is 8.
8. Transition elements start to appear in the first period.
9. Sodium oxide is from acidic oxides.
10. Copper reacts instantly with water and hydrogen gas evolves.
11. Chlorine element has the smallest atomic size.
12. Sodium is considered as the most active metal in the periodic table.
13. Alkali metals are bad conductors of heat and electricity.
14. Elements of group 1A are known as halogens.
15. Hydrogen is used in preserving eye cornea.
16. Fluorine is the only liquid halogen.
17. Sodium is used in making electronic slides.
18. Cobalt 60 is used in preservation of cornea of eye.
19. Inert gases have the properties of metals and nonmetals.
20. When the temperature of water decreases to less than 0 °C, its density decreases and, so it floats on water surface in the form of ice crystals.

21. Pure water has an **acidic** effect of litmus paper.
22. **Oil** is a covalent compound that dissolved in water.
23. Storing the tap water in plastic bottles cause the increase of infection of **hepatitis**.
24. **Chemical** pollution of water causes many diseases as typhoid and hepatitis.
25. Ice crystals have a **round** shape.
26. Mixing animals and human wastes with water causes **chemical** pollution.
27. Eating food containing high percentage of lead causes **blindness**.
28. **Sodium chloride** is from polar compounds.
29. **Covalent** bond is a weak electrostatic attraction force which arises among water molecules.
30. All weather phenomena like rain, wind and clouds occur in the **ionosphere**.
31. **Aneroid** is an instrument used to determine the elevation of aeroplanes above sea level.
32. The ozone layer is found in **thermosphere** layer.
33. The **thermometer** is an instrument used to measure atmospheric pressure.
34. Radio waves are reflected and transmitted by communication ion centers in **stratosphere**.
35. Meteors burn in **thermosphere** layer.
36. Increasing **O₂** concentration in the atmosphere produces global warming phenomenon.
37. **Millibar** is the unit of measuring the ozone degree.
38. Infrared radiation has a **chemical** effect.
39. Ultraviolet radiation has a **thermal** effect on Earth.
40. Dobson assumed that the natural amount of the ozone equals **100** Dobson units.
41. The ozone hole appears above the **middle east**.
42. **Mammoth** is an example of microfossils.
43. **Wadi El-Hetan** protectorate is the first established natural protectorate in Egypt.
44. Archaeopteryx links between reptiles and **mammals**.
45. Petrified wood is considered as **rocks**.
46. **Snow** is a solidified resinous matter secreted by pine trees.

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47. **Bald eagle** is from the birds that can't fly because of its small wings.
48. **Coral** fossils indicate that the environment where they lived was a hot and rainy tropical environment.
49. If the metal lost one electron or more, it will become a **negative** ion.
50. **The desert environment** is an example of the complex ecosystem.
51. Panda bear is considered from **extinct** species.

5 Given reason for:

1. Elements of the same group have similar properties.
.....
2. Magnesium oxide is a basic oxide.
.....
3. Cesium is the most active metal in group (1A).
.....
4. The atomic size increases in the same group by increasing the atomic number.
.....
5. The atomic size decreases in periods by increasing the atomic number.
.....
6. Bromine cannot replace chlorine in sodium chloride.
.....
7. Chlorine replaces bromine in potassium bromide solution.
.....
8. Sodium is kept under the surface of kerosene.
.....
9. Cobalt 60 is used in food preservation.
.....
10. Reaction of potassium with water is stronger than that of sodium with water.
.....
11. Liquefied nitrogen is used in preservation of the eye cornea.
.....
12. Water has high boiling point.
.....
13. Water density decreases on freezing.
.....

14. Dissolving of sugar in water although it is among covalent compounds.

15. Silicon slides are used in making electronics as computers.

16. Water molecule is from polar compounds.

17. Adding drops of dilute acid to water during its electrolysis.

18. Pure water doesn't affect blue and red litmus papers.

19. The lower part of stratosphere is suitable for flying aeroplanes.

20. Van-Allen belts play an important role in atmosphere.

21. Ozone layer is formed in stratosphere.

22. The ozone layer acts a protective shield for living organisms.

23. The global warming phenomenon has negative effects on Earth.

24. Occurrence of extinction in the recent ages.

25. Dodo bird was an easy target for hunters.

26. Simple ecosystem is affected strongly by the absence of one of its species .

27. Complicated ecosystem is not affected much by the absence of one of its species.

6 What happens if?

1. Adding the purple sunflower solution to a jar that has a piece of burning coal.

2. Putting a magnesium strip in a test tube containing oxygen.

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3. The pollution of water with animals and human wastes.

4. Storing drinking water in plastic bottles.

5. Dissolving magnesium oxide in water followed by drops of litmus solution.

6. Decreasing water temperature to less than 4°C .

7. Putting a magnesium strip in a test tube containing oxygen.

8. There is no ionosphere layer at the end of thermosphere.

9. Passage of electricity in Hoffman's voltmeter containing acidic water.

10. Overuse of Freon.

11. The overuse of methyl bromide as an insecticide.

12. The resinous matter, which was secreted by pine trees falls on an insect.

13. Eating fish contains high concentration of lead.

14. Extinction of a species from a balanced ecosystem.

7 Write the balanced chemical equations expressing the following reactions:

1. Magnesium and dilute hydrochloric acid.

2. Bromine and potassium iodide.

3. Chlorine and potassium iodide.

4. Chlorine and potassium bromide.

5. Formation of ozone gas.

.....

6. Dissolving of magnesium in water.

.....

7. Putting a piece of sodium in water.

.....

8. Dissolving of carbon dioxide in water.

.....

9. The electrolysis of water (Decomposition of acidified water by electricity).

.....

8 Give an example for:

1. Halogen exists in a liquid state.
2. The strongest metallic element.
3. A metalloid element.
4. Amphoteric oxide.
5. Covalent compound cannot dissolve in water.
6. A greenhouse gas.
7. Trace fossil.
8. A mold fossil.
9. A cast fossil.
10. Petrified fossil.
11. Microfossils which is considered a guide for existence of petroleum.
12. Fossil of a complete body.
13. An extinct bird recently.
14. An endangered bird.
15. An endangered mammal.
16. An endangered plant.
17. Fossils are found in El-Mokattam mountain.

9 Important problems:

1. Calculate the height of a mountain that the temperature at its base = 40°C and at its top = 12°C .
-
-
-

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2. If the temperature at a mountain foot is 35°C . Calculate the temperature at its top if its height is 3 km.

.....

.....

.....

3. Look at the opposite figure, then answer:

1- Mention the name of the apparatus.

.....

2- Label the figure.

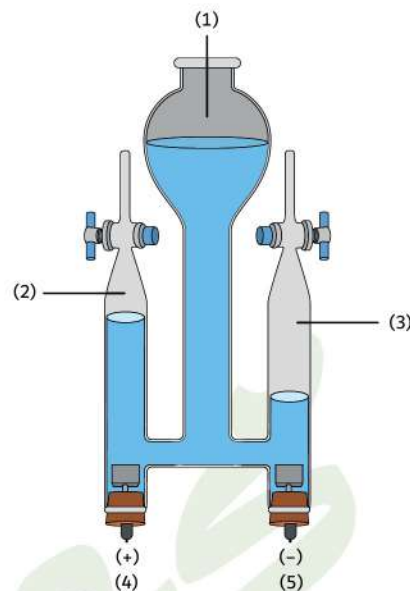
.....

3- Write the symbolic balanced chemical equation.

.....

4- Calculate the volume of the gas that evolves at the positive pole if the volume of the gas at the negative pole is 20 cm^3 .

.....



4. Study the opposite figures and answer the following questions:

1- Which figure represents a positive ion?

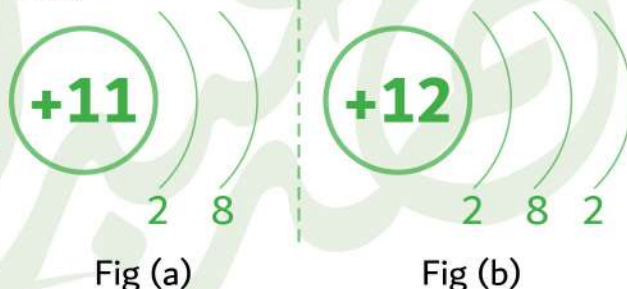
.....

2- Which figure represents a neutral atom?

.....

3- Determine the position of the atom in the periodic table.

.....



5. Using the following diagram which represents a part of the periodic table, answer the following questions:

${}^1_1\text{H}$																${}^2_2\text{He}$
3	X							5	6	Y	8	9	10			
11	12										Z	17	G			
19	M					N						35	${}^{36}_{36}\text{Kr}$			

1- Write the letter(s) of the element(s) which is/are:

- (1) among transition elements.
- (2) located in period (3) and group (6A).
- (3) among noble gases.
- (4) considered among s-block.
- (5) considered among p-block.

2. Choose:

(1) The letter (Y) represents element.

a ${}_9\text{F}$

b ${}_8\text{O}$

c ${}_{12}\text{Mg}$

d ${}_7\text{N}$

(2) The letter (M) represents element.

a ${}_{12}\text{Mg}$

b ${}_{16}\text{S}$

c ${}_{20}\text{Ca}$

d ${}_{18}\text{Ar}$

(3) The letter (N) is located in block.

a s

b p

c d

d f

3. What is the atomic number of the elements (N) and (G)?

10 Locate the position of the following elements in the modern periodic table:

1

${}_{19}\text{K}$

Group

Period

2

${}_2\text{He}$

Group

Period

3

${}_3\text{Li}$

Group

Period

4

${}_{11}\text{Na}$

Group

Period

5

${}_{20}\text{Ca}$

Group

Period

6

${}_{13}\text{Al}$

Group

Period

7

${}_{12}\text{Mg}$

Group

Period

8

${}_{16}\text{S}$

Group

Period

Last Look

First term

Mr. Mohamed Taha

Write the scientific term:

- 1- Continuous decrease in the number of species members without compensation until all die out.
- 2- A type of ultraviolet radiation that is absorbed completely 100% in ozone layer.
- 3- An animal has a wolf's head, dog's tail and skin like a tiger.
- 4- Pollution originated from leakage of radioactive substance from the nuclear reactors.
- 5- A charged layer reflects radio waves.
- 6- What a dead body of an organism leaves in sedimentary rocks.
- 7- The weight of air column of atmospheric air on unit area.
- 8- Arrangement of metals in a descending order to their chemical activity.
- 9- Continuous increase of the average temperature of air near earth's surface.
- 10- An instrument used by pilots to measure the elevation from the sea level.
- 11- Elements which start appear in the fourth period.

- 12- A kind of water pollutants which arises from different human activities.
- 13- The elements which have the properties of both metals and non metals.
- 14- They are safe areas established to protect endangered species in their homeland.
- 15- Remains of old living organisms that lived in the past for certain period then became extinct.
- 16- Replacing a part by part of the wood material of trees by silica to form petrified wood.
- 17- The type of ions which are formed by alkali metals during the chemical reactions.
- 18- Elements of group (B) in the modern periodic table.
- 19- A type of ultraviolet radiation rays penetrates the ozone layer by a ratio 100%.
- 20- A layer plays an important role in wireless communications.
- 21- It is used in preservation of the cornea of the eye.
- 22- It is a mammal that has a shape midway between horse and zebra.
- 23- A replica of external details of a skeleton of once an old living organism.
- 24- The block which contains the transition elements in the modern periodic table.
- 25- The positive pole of Hofmann's voltammeter.
- 26- A molecule is formed by combining an atom of an element with molecule of the same element.
- 27- The ability of the atom in the covalent molecule to attract the electrons of the chemical bond towards itself.
- 28- The measuring unit of atomic radius which is used as a measure for the atomic size.
- 29- A barometer used to determine the possible day weather.
- 30- An apparatus which is used in water electrolysis.

- 31- Monovalent nonmetals located in group (7A).
- 32- The death of all members of species of living organisms.
- 33- Two magnetic belts that help in scattering of harmful cosmic radiations away from the earth.
- 34- The first group of s-block elements in the periodic table.
- 35- A phenomenon that appears as brightly colored light curtains seen from the two poles of the earth.
- 36- The boundary separating between stratospheres when temperature is rather constant.
- 37- The coldest layer of the atmospheric envelope.
- 38- Elements in zero group.
- 39- It is the process of converting the molecules of some covalent compounds into ions.
- 40- Elements of group (1A) in the modern periodic table.
- 41- The scientist who discovered the presence of protons in the nucleus.
- 42- Curved lines that join the points of equal pressure in the atmospheric pressure maps.
- 43- Block of elements consists of 10 groups and found in the middle of the table.
- 44- The gas which evolves above the anode during water electrolysis.
- 45- The path of energy that transmits from a living organism to another in the ecosystem.
- 46- The halogen which exists in a solid state.
- 47- Thinning or losing parts of ozone layer.
- 48- A water pollutant which causes the death of brain cells.
- 49- The strongest nonmetallic element.
- 50- It puts the red list for the endangered species.

Complete the following statements:

- 1- Mendeleev arranged the elements ascendingly according to
- 2- And are from endangered mammals.
- 3- Fossils are found in rocks.
- 4- Most weather features occur in Layer, while satellite swim through layer.
- 5- Pure water boils at and freezes at
- 6- Archaeopteryx links between and
- 7- The most important green house gases are and
- 8- Is the region between stratosphere and mesosphere.
- 9-Is a type of barometers that is used to determine the day weather.
- 10- The highest element in electronegativity is , while the most metallic element is
- 11- Metal oxides are called oxides, while nonmetal oxides are called Oxides.
- 12- The ultraviolet radiations have effect, while the infrared radiations have effect.
- 13- During the electrolysis of acidified water gas evolves at the anode, while Gas evolves at the cathode.
- 14- The scientist discovered the main energy levels in the atom, but the scientist Rutherford discovered
- 15- Meteors are formed in layer, but satellites float in later.
- 16- Fossils are used in exploration and determining the age of
- 17- The halogens existed in gaseous state are and

- 18- Increasing the mercury concentration in drinking water causes, while arsenic increases the infection rate by
- 19- Among the pollutants of ozone layer compounds that are used in air conditioning sets and compounds that are used in fire extinguishers.
- 20- The hottest layer of the atmosphere is, while the coldest layer is
- 21- The modern periodic table consists of horizontal periods , vertical groups.

Give reasons:

- 1- The lower part of stratosphere is suitable for flying of airplanes.
- 2- Using radioactive cobalt in food preservation.
- 3- Water molecules is from polar compounds.
- 4- Occurrence of aurora phenomenon.
- 5- Extinction of passenger pigeons.
- 6- The atomic size increases through group.
- 7- Ionosphere is called by this name.
- 8- The alkali metals are kept under kerosene.
- 9- Water is used in extinguishing fires.
- 10- Dodo bird was an easy target for hunters.
- 11- Increasing the temperature of stratosphere layer gradually.
- 12- Sodium fires are not put off with water.
- 13- The bald eagle is one of endangered species.
- 14- Liquified nitrogen is used in preservation of cornea of the eye.

15- The air movement of the troposphere layer is vertical.

16- Removing trees is one from the most important factors of the extinction.

Write the balanced chemical equations:

1- Water electrolysis

2- Reaction of carbon dioxide with water

3- Reaction of magnesium with hydrochloric acid

4- The formation of ozone gas

5- Reaction between chlorine gas and potassium bromide.

6- Dissolving of magnesium oxide in water.

What is the difference between Complicated and simple ecosystems?

Problems:

1- If the temperature at the top of a mountain is 17 c. calculate the temperature at its base if the mountain height is 2000 m?

2- Calculate the temperature at the top of Everest mountain, which its height is 8862 meter, if the temperature at the foot of this mountain is 20.6c?

3- Calculate the height of a mountain if the temperature at its based is 20c and at its top is -6c?

Mention the position of the following elements in the modern periodic table:

$_{11}\text{Na}$ $_{20}\text{Ca}$ $_{17}\text{Cl}$ $_{10}\text{Ne}$ $_{3}\text{Li}$ $_{18}\text{Ar}$ $_{8}\text{O}$ $_{19}\text{K}$

Wishing you all good luck

Mr. Mohamed

6

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Final Revision Prep.2

1-Choose the correct answer :

(1) Each period in the modern periodic table starts with..... element.

(metallic - semimetallic - nonmetallic - inert)

(2) In the same period, the element which has the highest electro negativity lies in group
..... (0 - 7 A - 2 A - 1 A)

(3) When sodium react with water..... gas evolves. (O₂ - CO₂ - H₂ - N₂)

(4) A liquid boils at 100 °C, what is the other property which affirm it is a pure water

(Sugar dissolves in it / when it freezers , denstiy decreases / neutral on both litmus
paper / it evaporates on heating)

(5) Scientistsdiscovered the main energy levels in the atom

(Bohr / Mendeleev / Mosely / Hoffman)

(6) Sodium oxide fromoxides (amphoterich / acidic / nonmetallic / basic)

(7) All the following elements from semimetals except for

(telerium / silicorn / boron / bromine)

(8) The strongest metal lies in the group. (2A / 1A / 1B / 7A)

9) -Normal atmospheric pressure equals millibar.

(1013.25 / 76 / 1.013 / 760)

10)is located between stratosphere and mesosphere.

(Tropopause / Stratopause / Mesopause / Thermopause)

11)- Meteors burn in

(mesosphere / ionosphere / exosphere / stratosphere)

12) Ozone Layer is measured by a unit called

(Km / Dobson / UV / mm³)

13) All are greenhouse gases except

(CO₂ / O₂ / N₂O / CH₄)

(14) is an example of microfossils.

(Mammoth / Ferns / Foraminifera / archaeopteryx)

(15) Complete fossils of insects are found preserved in

(ammonites / amber / igneous rocks / ambergris)

16) indicate(s) extinction.

(Fossils / Protectorates / Evolution / Ecological equilibrium)

(17) protectorate is the first established natural protectorate in Egypt.

(Saint Cathrine / Ras Mohamed / Wadi Hetan / Petrified forest)

18)..... form positively charged ions when they enter in the chemical reactions.

(Inert gases - Nonmetal - Halogens - Alkali metals)

19)The elements of group (17) are called

(alkali metals - halogens - inert gases - alkaline Earth metals)

20) Meteors are formed in

(exosphere - thermosphere - mesosphere - stratosphere)

21) is one of the most important causes of the recent extinction age.

(Volcanic eruption - Falling of icebergs - Falling of meteorites -
Overhunting and environmental pollution)

22)The number of known elements is.....

a- 216

b-118

c-316

d-16

23) The number of negative electrons in the atom in its normal state equals

- a- number of protons. b- number of neutrons.
- c- twice the number of protons. d- half the number of neutrons.

24)The atomic number of the elements equals:

- a- The sum of neutron numbers inside the nucleus.
- b- Sum of the number of electrons which rotate in the energy levels
- c- The number of protons inside the nucleus.
- d- b&c are correct.

25)The density of pure water in solid state is:

- a- Less than its density in liquid state.
- b- Equal to its density in vapour state.
- c- Greater than its density in liquid state.
- d- Greater than its density in vapour state.

26) From the most common recently extinct species is.....

- a- Dodo bird. b- Quagga.
- c- Golden frog. d- All the previous.

(27) All of the following are from the properties of water except

(neutral on both litmus paper / analysis by heat / increase in volume on heating / polar compound

Write the scientific term for each of the following statements:

- (1) The death of all members of species of living organisms. (.....)
- (2) Extinct animal has a wolf's head, a dog's tail and a tiger's skin. (.....)
- (3) Remains of old organisms that lived in the past for a certain period and then became extinct.
- (4) Replacing, part by part, the wood material of trees by silica to form petrified wood.
- 5) The boundary separating between stratosphere and mesosphere where temperature is rather constant. (.....)
- 6) Charged layer reflects radio waves. (.....)
- 7) One of the atmosphere components that its ratio increased in recent years to reach about 0.038%. (.....)
- 8) A type of ultraviolet radiation that is absorbed completely (100%) in the Ozone Layer. ()
- 9) The boundary separating between stratosphere and mesosphere where temperature is rather constant. (.....)
- 10) Charged layer reflects radio waves.....)
- 11) One of the atmosphere components that its ratio increased in recent years to reach about 0.038%. (.....)
- 12) A type of ultraviolet radiation that not absorbed completely (100%) in the Ozone Layer. (.....)
- 13) The ascending order of the elements according to their atomic mass (.....).
- 14) The ascending order of the elements according to their atomic number (.....).
- 15) The horizontal rows in the Mandeleev's table (.....).
- 16) The vertical columns in the Mandeleev's table (.....).
- 17) Indicated by the letter K, L, M, N, O. (.....).
- 18) Indicated by the letter S, P, d, F (.....)
- 19) A kind of elements symbolized by the letter B (.....).
- 20) The block that contains the groups from 3A to 6A. (.....).
- 21) The block that contains the series of luthanides and actinides (.....).
- 22) The ability of the atom in the covalent molecule to attract the chemical bond electron to it.(.....)

- 23) A kind of oxide reacts as basic oxides or acidic oxides according to the reaction condition.(.....)
- 24) A kind of elements in which their valency electrons contain less than 4 electrons (...)
- 25) A group that contains the strongest non-metals. (.....)
- 26) The block that contains the groups from 3A-7A (.....)
- 27) The region between mesosphere and thermosphere. (.....)
- 28) The 4th layer of the atmospheric envelope. (.....)
- 29) A device used to measure the altitude from the earth's surface.(.....)
- 30) A layer of the atmospheric envelope in which air moves vertically. (.....)
- 31) Two magnetic belts help in dispersing the harmful cosmic radiation away from the earth.(.....)
- 32) The phenomenon looks like a colorful light curtain seen at the two poles.(.....)
- 33) The atmospheric envelope layer that contains a certain amount of helium and hydrogen gas only.(.....)
- 34) The region where the atmospheric envelope merges with the outer space.(.....)
- 35) The phenomenon that increases the percentage (.....)
- 36) A kind of gas formed in the stratosphere. (.....)
- 37) The gas resulting from the reaction of a chlorine atom with ozone gas.(.....)
- 38) A kind of ray that causes the rising of temperature in the troposphere layer. (.....)
- 39) The traces and remains of the old living organisms which are preserved in sedimentary rocks. (.....)
- 40) The traces that indicate the activity of the living organism during their life.(.....)
- 41) The traces that indicate the remains of the old living organism after their death. (.....)
- 42) The process of conservation of the parts of old living organisms in the solidified materials as a result of replacing the organic material of the organism with minerals. (.....)
- 43) Fossils of living organisms lived for a short period of time and in a wide geographical range. (.....)

- 44) The fossils present in the rocks of different regions and they indicate the evolution and extinction of living organism. (.....)
- 45) The continuous decrease in the number of individuals from the same species of living organisms without compensation with birthing.(.....)
- 46) Hunting wild animals with a random unorganized way which exposes it to extinction.
(.....)
- 47) The path which energy takes when transporting from one living organism to another one inside the environmental system. (.....)
- 48) The environmental system that is affected severely by the absence of one species of the living organism that live in it. (.....)
- 49) The environmental system that is not affected severely by the absence of one species of the living organism that live in it.(.....)
- 50) Safe places that are specified to protect the endangered species in their natural environment.(.....)

Complete:

- (1) Mendeleev arranged the elements ascendingly according to while Moseley arranged them ascendingly according to
- (2) The modern periodic table consists of ... horizontal periods ,vertical groups.
- 3) The highest temperature layer in the atmosphere is.....and the least temperature one is
- 4) Most of weather features occur in.....layer whereas satellites swim through the.... layer.
- 5) Ultraviolet radiation has a effect, and the infrared radiation has a effect.
- 6) Among the pollutants of the Ozone Layer are compounds that are used in air conditioning sets and.....compounds that are used in fire extinguishers.
- (7) Archaeopteryx represents the link between and
- (8) Fossils are used in exploration and determining the age of
- (9) In Mendeleev's table the elements are arranged.....according to their atomic weight.
- (10) The Newzealand scientist Rutherford discovered that the atom contains
Of positive charge.

(11)The alkali metal elements are.....valent.

(12)Halogens lie in the elements of(7A) group.

From the opposite figure , answer the following questions :-

1. What is the name of this apparatus?

.....

2. Label the numbers (1) , (2) , (3) , (4) and (5) .

.....

.....

.....

3. What happens if a glowing splint is put
above the anode and the cathode ?

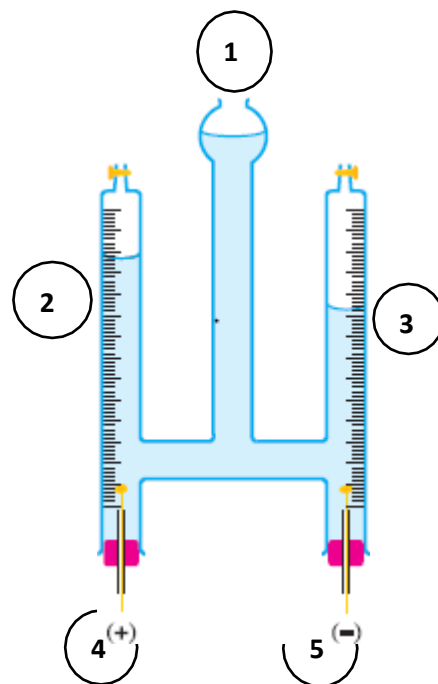
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.....

4. **Calculate** the volume of the gas that
evolves at the anode if the volume of the gas
that evolves at the cathode is 20 cm^3 .

.....

.....



Exam on unit one

1-Complete:-

1. Mendeleev arranged the elements ascending according to
while Moseley arranged them ascending according to
2. The d- block contains.....element.
3. Sodium is kept under the surface ofto
prevent it from the reaction with
4. Hydrogen bond is a weak.....attraction force
between the molecules of.....compounds.
5. By increasing the atomic number the atomic size In the period.

2- Choose the correct answer:

1.The scientist who left gaps in his table to be filled with suitable
discovered elements in the future is

a-Moseley b-Rutherford c-Bohr d-Mendeleev

2.When sodium reacts with water,..... gas is evolves.

a-N₂ b-O₂ c-H₂ d-CO₂

3From the positive ions during the chemical reaction.

a-Nobel gases b-Non-metals c-Halogens d-Alkali metals

4is used in liquid state to transfer heat from inside the nuclear reactor to outside

a-Liquid sodium b-Cobalt -60 c- liquefied nitrogen d-Silicon

3- Write the scientific term:

1. Vertical column in Mendeleev's table. (.....)
2. A bond that exists between water molecules. (.....)
3. The block that contains the series of lanthanides and actinides.
(.....)

4- Give reasons for:

1. Bromine can't replace Chlorine in its salt solution.
.....
2. Elements of the same group have the same properties.
.....
3. Solution of carbon dioxide in water turns the violet litmus
solution into red.
.....

Exam on unit two

1.Complete the following :

1. and are greenhouse gases.
2. Atmospheric pressure is the of air column on a unit area.
3. Air movement in troposphere is , where hot air currents move, while cold air current move
4. CFC_s compounds commercially known as and they are used in ,

2.Write the scientific term :

1. Charged layers which reflects radio waves. (.....)
2. Two magnetic belt that help in scattering harmful radiation. (...)
3. The increase of CO₂ gas concentration. (...)
4. The layer of atmosphere which contains ions. (.....)

3.Correct the under lined words :

1. All UV-C are penetrated by ozone layer.
2. The normal degree of ozone layer 200 DU.
3. UV has thermal effect with short wavelength.
4. Stratosphere is the hottest atmospheric layer.

4.Mention the importance of :

- 1-Aneroid
- 2-Halons
- 3-Ozone layer

Exam on unit three

1. Complete the following :

- 1... trees secrete resinous matter, which changes into ... after its solidification.
2. Fossils are used in petroleum and determining the age of
- 3..... is considered among the safe places that have endangered species.
4. From the extinct animals in the old ages are and

2. Write the scientific term:

1. It is the process of replacing wood material of trees by silica ()
2. The death of all members of species of living organisms. (...)
3. Remains of old organisms that lived in the past for a certain period, then become extinct. (.....)

3. Exclude the unsuitable word and mention what the rest has in common:

1. Rhinoceros / Panda bear / Quagga / Bald eagle. (.....)
2. Quagga / Dodo bird / Mammoth / Bald eagle. (.....)

4. Choose the correct answer:

1. The complete body fossil of mammoth is preserved in
a- amber b- snow c- sedimentary rocks d- sandy rock
2. All of the following are endangered species except
a- panda b- bald eagle c- quagga d- rhinoceros

Model exam 1

Question (1):-

A) Write the scientific term :

1. The ability of the atom to attract the electrons of the chemical bond towards itself. [.....]
- 2- Safe areas established to protect endangered species in their home land .
[.....]
4. It is the continuous decrease without compensation in the number of a certain specie until all members die . [.....]

B) What is the importance of :

- 1- Cobalt 60:.....
- 2- Ozone layer

3- C- Locate the position of the following elements in the modern periodic table :-

¹³Al

²He

¹⁹K

D- Correct the under lined words :-

- 1- Lithium is the most active metal in group 1A
- 2- The complete fossils of insects are found preserved in mold.
- 3- If the atomic number of an element X is 5, the atomic number of the element Y that follows it in the same group is 15
- 4- Nonmetal oxides dissolve in water forming alkalis.

Question (2) :-

A) Complete the following statements :

- 1- and
are from the recent factors that cause extinction of some living organisms .
- 2- and.....are from the most important gases that harm the earth .
- 3-are remains of the old living organisms that preserved in sedimentary rocks .
- 4- Water has a high boiling point due to the presence of....bond between its molecules .

B) Compare between the following :

1) Group (1):

group (17) :

[according to : Name – Valence]

2) Stratosphere.....

Mesosphere :-

[according to : Temperature – type of gases]

Question (3):-

A) Choose the correct answer :

1.The elements that have both properties of metals and non-metals are
.....

a- inert gases b- halogens c- metalloids d- actinides

3. Elements of block “d” are called

a- lanthanides b- noble gases c- transition elements d- actinides

4. A replica of the outer shell shape of the skeleton of a living organism is
..... a- mold b- trace c- petrified wood d- cast

B) Problem :

Calculate the height of a mountain if the temperature at its foot is 20°C
and at its top is -6°C

.....
.....
.....

C) Complete the equations:



Question (4) :-

A) Put (\checkmark) or (\times) and correct the wrong ones :

1. Amphibian was the first vertebrate that appeared . []
2. Copper and Carbon don't react with hydrochloric acid . []
3. Mendeleev arranged the elements ascendingly according to atomic . [\times]
4. Drainage of factories wastes in rivers and seas is pollution . []

B) Give reason for :

1. Ionosphere is important for radio stations .

.....

2. Within a period , the atomic size decreases by increasing the atomic number.

Final Revision Prep.2

1-Choose the correct answer :

(1) Each period in the modern periodic table starts with element.

(**metallic** - semimetallic - nonmetallic - inert)

(2) In the same period, the element which has the highest electro negativity lies in group (0 - **7 A** - 2 A - 1 A)

(3) When sodium react with water gas evolves. (O₂ - CO₂ - **H₂** - N₂)

(4) A liquid boils at 100 °C, what is the other property which affirm it is a pure water

(Sugar dissolves in it / when it freezers , denstiy decreases / **neutral on both litmus** paper / it evaporates on heating)

(5) Scientists discovered the main energy levels in the atom

(**Bohr** / Mendeleev / Mosely / Hoffman)

(6) Sodium oxide from oxides (amphoteric / acidic / nonmetallic / **basic**)

(7) All the following elements from semimetals except for

(telerium / silicorn / boron / **bromine**)

(8) The strongest metal lies in the group. (2A / **1A** / 1B / 7A)

9) -Normal atmospheric pressure equals millibar.

(**1013.25** / 76 / 1.013 / 760)

10)- is located between stratosphere and mesosphere.

(Tropopause / **Stratopause** / Mesopause / Thermopause)

11)- Meteors burn in

(**mesosphere** / ionosphere / exosphere / stratosphere)

12) Ozone Layer is measured by a unit called

(Km / **Dobson** / UV / mm³)

13) All are greenhouse gases except

(CO₂ / **O₂** / N₂O / CH₄)

(14) is an example of microfossils.

(Mammoth / Ferns / **Foraminifera** / archaeopteryx)

(15) Complete fossils of insects are found preserved in

(ammonites / **amber** / igneous rocks / ambergris)

16) indicate(s) extinction.

(**Fossils** / Protectorates / Evolution / Ecological equilibrium)

(17) protectorate is the first established natural protectorate in Egypt.

(Saint Cathrine / **Ras Mohamed** / Wadi Hetan / Petrified forest)

18)..... form positively charged ions when they enter in the chemical reactions.

(Inert gases - Nonmetal - Halogens - **Alkali metals**)

19)The elements of group (17) are called

(alkali metals - **halogens** - inert gases - alkaline Earth metals)

20) Meteors are formed in

(exosphere - thermosphere - **mesosphere** - stratosphere)

21) is one of the most important causes of the recent extinction age.

(Volcanic eruption - Falling of icebergs - Falling of meteorites -

Overhunting and environmental pollution)

22)The number of known elements is.....

a- 216

b-**116**

c-316

d-16

23) The number of negative electrons in the atom in its normal state equals

a- **number of protons.**

b- number of neutrons.

c- twice the number of protons.

d- half the number of neutrons.

24) The atomic number of the elements equals:

- a- The sum of neutron numbers inside the nucleus.
- b- Sum of the number of electrons which rotate in the energy levels
- c- The number of protons inside the nucleus.
- d- **b&c are correct.**

25) The density of pure water in solid state is:

- a- **Less than its density in liquid state.**
- b- Equal to its density in vapour state.
- c- Greater than its density in liquid state.
- d- Greater than its density in vapour state.

26) From the most common recently extinct species is.....

- a- Dodo bird.
- b- Quagga.
- c- Golden frog.
- d- **All the previous.**

(27) All of the following are from the properties of water except

(neutral on both litmus paper / **analysis by heat** / increase in volume on heating / polar compound)

Write the scientific term for each of the following statements:

- (1) The death of all members of species of living organisms. (**extinction**)
- (2) Extinct animal has a wolf's head, a dog's tail and a tiger's skin. (**Tasmanian cat**)
- (3) Remains of old organisms that lived in the past for a certain period and then became extinct. **fossils**
- (4) Replacing, part by part, the wood material of trees by silica to form petrified wood. **pertification**
- 5) The boundary separating between stratosphere and mesosphere where temperature is rather constant. (**stratopause**)
- 6) Charged layer reflects radio waves. (**ionosphere**)
- 7) One of the atmosphere components that its ratio increased in recent years to reach about 0.038%. (**CO2**)

- 8) A type of ultraviolet radiation that is absorbed completely (100%) in the Ozone Layer. (**far uv**)
- 9) The boundary separating between stratosphere and mesosphere where temperature is rather constant. (**stratopause**)
- 10) Charged layer reflects radio waves. **ionosphere**)
- 11) One of the atmosphere components that its ratio increased in recent years to reach about 0.038%. (**CO2**)
- 12) A type of ultraviolet radiation that not absorbed completely (100%) in the Ozone Layer. (**near uv**)
- 13) The ascending order of the elements according to their atomic mass (**Mendeleev's table**).
- 14) The ascending order of the elements according to their atomic number (**Mosley's table**).
- 15) The horizontal rows in the Mandeleev's table (**period**).
- 16) The vertical columns in the Mandeleev's table (**groups**).
- 17) Indicated by the letter K, L, M, N, O. (**main energy levels**).
- 18) Indicated by the letter S, P, d, F (**sub levels**)
- .
- 19) A kind of elements symbolized by the letter B (**transition elements**).
- 20) The block that contains the groups from 3A to 6A. (**P- block**).
- 21) The block that contains the series of luthanides and actinides (**F- block**).
- 22) The ability of the atom in the covalent molecule to attract the chemical bond electron to it.(**electronegativity**)
- 23) A kind of oxide reacts as basic oxides or acidic oxides according to the reaction condition.(**metalloids**)
- 24) A kind of elements in which their valency electrons contain less than 4 electrons.
(**metals**)
- 25) A group that contains the strongest non-metals. (**7A – Halogens**)
- 26) The block that contains the groups from 3A-7A (**P-block**)
- 27) The region between mesosphere and thermosphere. (**mesopause**)
- 28) The 4th layer of the atmospheric envelope. (**thermosphere**)
- 29) A device used to measure the altitude from the earths surface.(**Altimeter**)

- 30) A layer of the atmospheric envelope in which air moves vertically. (**troposphere**)
- 31) Two magnetic belts help in dispersing the harmful cosmic radiation away from the earth.(**Van Allen belts**)
- 32) The phenomenon looks like a colorful light curtain seen at the two poles.(**Aurora**)
- 33) The atmospheric envelope layer that contains a certain amount of helium and hydrogen gas only.(**Mesosphere**)
- 34) The region where the atmospheric envelop merges with the outer space.(**exosphere**)
- 35) The phenomenon that increases the percentage of carbon dioxide and leads to an increase in temperature.(**global warming**)
- 36) A kind of gas formed in the stratosphere.(**Ozone gas**)
- 37) The gas resulting from the reaction of a chlorine atom with ozone gas.(**oxygen**)
- 38) A kind of ray that causes the rising of temperature in the troposphere layer. (**infra-red rays**)
- 39) The traces and remains of the old living organisms which are preserved in sedimentary rocks. (**fossils**)
- 40) The traces that indicate the activity of the living organism during their life.(trace)
- 41) The traces that indicate the remains of the old living organism after their death. (**remains**)
- 42) The process of conservation of the parts of old living organisms in the solidified materials as a result of replacing the organic material of the organism with minerals. (**petrification**)
- 43) Fossils of living organisms lived for a short period of time and in a wide geographical range. (**index fossil**)
- 44) The fossils present in the rocks of different regions and they indicate the evolution and extinction of living organism. (**fossils record**)
- 45) The continuous decrease in the number of individuals from the same species of living organisms without compensation with birthing.(**extinction**)
- 46) Hunting wild animals with a random unorganized way which exposes it to extinction.(**over hunting**)
- 47) The path which energy takes when transporting from one living organism to another one inside the environmental system. (**food chain**)
- 48) The environmental system that is affected severely by the absence of one species of the living organism that live in it. (**simple ecosystem**)

- 49) The environmental system that is not affected severely by the absence of one species of the living organism that live in it.(**complicated ecosystem**)
- 50) Safe places that are specified to protect the endangered species in their natural environment.(**natural protectorate**)

Complete:

- (1) Mendeleev arranged the elements ascendingly according to **atomic weight** while Moseley arranged them ascendingly according to **atomic number**
- (2) The modern periodic table consists of **7** horizontal periods , **18**vertical groups.
- (3) The highest temperature layer in the atmosphere is **thermosphere** and the least temperature one is **mesosphere**
- (4) Most of weather features occur in **troposphere**layer whereas satellites swim through the **exosphere** layer.
- (5) Ultraviolet radiation has a **chemical** effect, and the infrared radiation has a **thermal** effect.
- (6) Among the pollutants of the Ozone Layer are **CFC** compounds that are used in air conditioning sets and **halons** compounds that are used in fire extinguishers.
- (7) Archaeopteryx represents the link between **reptiles** and **birds**
- (8) Fossils are used in **petrol** exploration and determining the age of **sedimentary rocks**
- (9) In Mendeleev's table the elements are arranged **ascending order** according to their atomic weight.
- (10) The Newzealand scientist Rutherford discovered that the atom contains **protons** Of positive charge.
- (11)The alkali metal elements are **mono** valent.
- (12)Halogens lie in the elements of **17 (7A)** group.

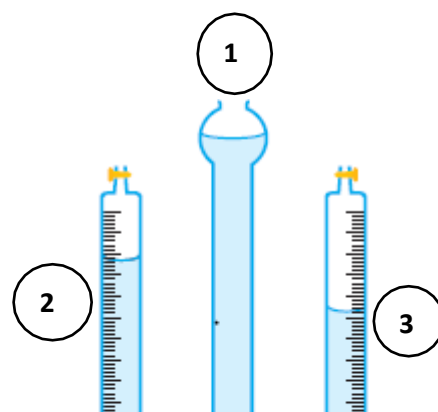
From the opposite figure , answer the following questions :-

1. What is the name of this apparatus?

Hoffman's voltmeter

2. Label the numbers (1) , (2) , (3) , (4) and (5) .

1-Water +drops of dil



H₂SO₄ 2- oxygen gas

3-Hydrogen gas

3. What happens if a glowing splint is put
above the anode and the cathode ?

4

5

At anode the glowing of splint increases.

At cathode it will burns with a blue flame and pop sound.

4. Calculate the volume of the gas that
evolves at the anode if the volume of the gas
that evolves at the cathode is 20 cm³.

Volume of oxygen = volume of hydrogen / 2

$$= 20/2 = 10 \text{ cm}^3$$

Exam on unit one

1-Complete:-

1. Mendeleev arranged the elements ascending according to atomic weight, while Moseley arranged them ascending according to atomic number.

2. The d- block contains transition element.
3. Sodium is kept under the surface of kerosene to prevent it from the reaction with moist air.
4. Hydrogen bond is a weak electrostatic attraction force between the molecules of polar compounds.
5. By increasing the atomic number the atomic size decreases In the period.

2- Choose the correct answer:

1. The scientist who left gaps in his table to be filled with suitable discovered elements in the future is

a-Moseley b-Rutherford c-Bohr **d-Mendeleev**

2. When sodium reacts with water, gas is evolves.

a-N₂ b-O₂ **c-H₂** d-CO₂

3. From the positive ions during the chemical reaction.

a-Noble gases b-Non-metals c-Halogens **d-Alkali metals**

4. is used in liquid state to transfer heat from inside the nuclear reactor to outside

a-Liquid sodium b-Cobalt -60 c- liquefied nitrogen d-Silicon

3- Write the scientific term:

1. Vertical column in Mendeleev's table. (**Groups**)
2. A bond that exists between water molecules. (**Hydrogen bond**)
3. The block that contains the series of lanthanides and actinides.
(**f- block**)

4- Give reasons for:

1. Bromine can't replace Chlorine in its salt solution.

Bec, bromine is less active than chlorine.

2. Elements of the same group have the same properties.

Bec, they have the same number of electrons in the outer most energy level

3. Solution of carbon dioxide in water turns the violet litmus solution into red.

Bec, it is non metal(acidic) oxide

Exam on unit two

1. Complete the following :

1. CO₂ and ... C.F.C.s are greenhouse gases.
2. Atmospheric pressure is the ... weight ... of air column on a unit area.
3. Air movement in troposphere is ... vertical , where hot air currents move ... upward ..., while cold air current move ... downward
4. CFC_s compounds commercially known as ... Freon and they are used in ... refrigeration, aerosols and foam backing

2. Write the scientific term :

1. Charged layers which reflects radio waves. (... Ionosphere)
2. Two magnetic belt that help in scattering harmful radiation. (.. Van-Allen belts)
3. The increase of CO₂ gas concentration. (... green house effect)
4. The layer of atmosphere which contains ions. (..... Ionosphere .)

3. Correct the under lined words :

1. All UV-C are penetrated by ozone layer. Absorbed
2. The normal degree of ozone layer 200 DU. 300
3. UV has thermal effect with short wavelength. Chemical
4. Stratosphere is the hottest atmospheric layer.

Thermosphere 4. Mention the importance of :

- 1- Aneroid Determine the weather conditions
- 2- Halons Used in fire extinguishers
- 3- Ozone layer Protect the Earth from harmful U.V. rays

Exam on unit three

1. Complete the following :

- 1...pine ...trees secrete resinous matter, which changes into ...amber....after its solidification.
- 2.Fossils are used in petroleum ...exploration and determining the age of ...sedimentary rocks.....
- 3...Natural protectorate is considered among the safe places that has endangered species.
- 4.From the extinct animals in the old ages are ...dinosaurs..... and ...mammoth.....

2.Write the scientific term:

- 1.It is the process of replacing wood material of trees by silica (...Petrification.....)
- 2.The death of all members of species of living organisms. (...Extinction)
3. Remains of old organisms that lived in the past for certain period,then become extinct.
(.....index Fossils)

3.Exclude the unsuitable word and mention what the rest has in common:

- 1.Rhinoceros / Panda bear / Quagga / Bald eagle. (endangered species)
- 2.Quagga / Dodo bird / Mammoth / Bald eagle.
(extinct animal)

4.Choose the correct answer:

- 1.The complete body fossil of mammoth is preserved in
a- amber b- snow c- sedimentary rocks d- sandy rock
2. All of the following are endangered species except
a- panda b- bald eagle c-quagga d-rhinoceros



Question (1):-

A) Write the scientific term :

1. The ability of the atom to attract the electrons of the chemical bond towards itself. [...**Electronegativity**..]
- 2-Safe areas established to protect endangered species in their home land .
[**Natural protectorate**..]
4. It is the continuous decrease without compensation in the number of a certain specie until all members die .
[.....**Extinction**.....]

B) What is the importance of :

- 1- Cobalt 60: **emits gamma rays which used in food preservation**
- 2- Ozone layer .: **protect the Earth from harmful U.V. rays that coming from the sun**

C- Locate the position of the following elements in the modern periodic table :-

$_{13}\text{Al}$ **period = 3 group = 3A**

$_2\text{He}$ **period = 2 group = zero**

$_{19}\text{K}$ **period = 4 group = 1A**

D- Correct the under lined words :-

- 1- **Lithium** is the most active metal in group 1A . **cesium**
- 2- The complete fossils of insects are found preserved in **mold**. **amber**
- 3- If the atomic number of an element X is 5, the atomic number of the element Y that follows it in the same group is **15** .**13**
- 4- Nonmetal oxides dissolve in water forming **alkalis**. **acids**



Question (2) :-

A) Complete the following statements :

- 1-over hunting..... and ...environmental pollution.....
are from the recent factors that cause extinction of some living organisms .
- 2-CO₂..... and ...C.F.C.sare from the most important gases that
harm the earth .
- 3-Fossils..... are remains of the old
living organisms that preserved in sedimentary rocks .
- 4- Water has a high boiling point due to the presence of
.....hydrogenbond between its molecules .

B) Compare between the following :

1) Group (1):alkali metals - monovalent

group (17) : halogen - monovalent

[according to : Name – Valence]

2) Stratosphere: 0°C - oxygen gas

Mesosphere :-90°C - helium and hydrogen

[according to : Temperature – type of gases]

Question (3):-

A) Choose the correct answer :

1.The elements that have both properties of metals and non-metals are
.....

a- inert gases

b- halogens

c- metalloids

d- actinides

3. Elements of block “d” are called

a- lanthanides

b- noble gases

c- transition

elements

d- actinides

4. A replica of the outer shell shape of the skeleton of a living organism is

..... a- mold b- trace c- petrified wood **d- cast**

B) Problem :

Calculate the height of a mountain if the temperature at its foot is 20°C and at its top is -6°C

Temp. at the top = temp. at the foot $- 6.5 \times \text{height}$

$-60 = 20 - 6.5 \times \text{height}$

Height = 12.3 Km

C) Complete the equations:

$2\text{Na} + \dots \text{2H}_2\text{O} \dots \longrightarrow \text{2NaOH} + \dots \text{H}_2 \dots$

Question (4) :-

A) Put (\checkmark) or (\times) and correct the wrong ones :

1. **Amphibian** was the first vertebrate that appeared . [\times] **Fish**
2. Copper and Carbon don't react with hydrochloric acid . [\checkmark]
3. Mendeleev arranged the elements ascendingly according to atomic **number** .
[\times] **weight**.
4. Drainage of factories wastes in rivers and seas is **a biological** pollution . [\times] **Chemical**

B) Give reason for :

1. Ionosphere is important for radio stations .

Bec, it reflects the radio waves that transmitted from radio stations and communication centers

3. Within a period , the atomic size decreases by increasing the atomic number.

Due to increasing the attraction force between positive protons and negative electrons

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Choose the correct answer

1. The atmospheric pressure on the top of a mountain is the atmospheric pressure at the sea level.
a. less than b. more than c. equal to d. half
2. The scientist had protons inside the nucleus .
a. Moseley b. Bohr c. rutherford d. Mendeleev
3. ozone layer is found in layer.
a. troposphere b. stratosphere c. mesosphere d. thermosphere
4. is an example of microfossils.
a. Mammoth b. Ferns c. Foraminifera d. Archaeopteryx
5. The ozone hole increases in of each year.
a. October b. September c. December d. January
6. The hottest atmospheric layer is the
a. troposphere. b. stratosphere. c. mesosphere. d. thermosphere.
7. Fossils are often found in rocks.
a. metamorphic b. sedimentary c. volcanic d. igneous
8. The coldest atmospheric layer is
a. troposphere. b. stratosphere. c. mesosphere. d. thermosphere.
9. complete body fossils of insects are found preserved in
a. ammonites. b. amber. c. igneous rocks. d. ambergris.
10. react very slowly with cold water.
a. K and Na b. Cu and Ag c. Zn and Fe d. Ca and Mg
11. Complete fossils of mammoth are found preserved in
a. ammonites. b. amber. c. snow.
12. All of the following are endangered species except
a. panda bear. b. bald eagle. c. dodo bird.

13. Most of alkali metals have.....density.

- a . low b. high c. same

14.The scientist who discovered that the nucleus of the atom contains positively particlesis

- a. Mendeleev. b. Bohr. c. Rutherford.

15.Pilots prefer to fly their planes in

- a. exosphere. b. stratosphere. c. thermosphere.

16.is one of the most important reasons of the recent extinction age.

- a. Volcanic eruption b. Long glacial age c. Overhunting

17.The unit which used to measure ozone degree is

- a. Dobson. b. millibar. c. nanometer.

18.Magnesium oxide is considered as oxides.

- a. acidic b. nonmetallic c. bas d. metallic

19. Complete body fossils of insects are found preserved in

- a. amber. b. ammonites. c. igneous rocks. d.mammoth.

20. All of the following cause erosion of ozone layer except

- a. aerosols. b. Freon c. nitrogen oxides. d. iron oxides.

21.Satellites orbit inof the Earth.

- a. exosphere b. thermosphere c. mesosphere d. stratosphere

22.All are greenhouse gases except

- a. CO₂ b. N₂O c.O₂

23.The air movesin the stratosphere layer.

- a. horizontally b. vertically c. with wind motion d. no correct

24.There are..... bonds in a sample of water.

- covalent b. hydrogenc. ionic d. covalent andhydrogen

25. Fossils are found inrocks.

- a. metamorphic b. sedimentary c. igneous d. no correct answer

26. is from the recent extinction animal.

- a. Mammoth b. Panda bear c. Quagga d. Bald eagle
b.

27. The devices. which is used in measuring the atmospheric pressure is.....

- a. ammeter. b. aneroid. c. altimeter. d. (b) and (c).

28. The degree of ozone is measured by..... unit.

- a. Picometre b. par c. Dobson

29. represents the link between reptiles and birds.

- a. Archaeopteryx b. Fish c. Quagga

30. protectorate is the first established natural protectorate in Egypt.

- a. Saint Catharine b. Ras Mohamed c. Wadi Hetan

31. Sodium oxide from..... oxides.

- a. amphoteric b. acidic c. basic

32. Each period in the modern periodic table starts with (a/an)

- a. metallic b. inert c. nonmetallic

33. The strongest metal locates in thegroup.

- a. Zero b. 1A c. 2A d. 7A

34. Complete fossils of mammoth are found preserved in

- a. ammonites. b. amber. c. snow.

35. The..... is/are used in extinguishing fires.

- a. methyl bromide gas b. halons c. nitrogen oxide

36. All the following elements from metalloids except for

- a. silicon. b. bromine. c. boron.

37. The elements of group (1A) are known as

- a. alkali metals. b. halogens. c. alkaline Earth metals.

38. Metal oxides areoxides.

- a. acidic b. basic c. amphoteric

39. The first established natural protectorate in Egypt is

- a. petrified forest. b. Wadi Hetan. c. Ras Mohamed

40. Atmospheric pressure at tropopause equal..... mb.
a. 100 b. 1000 c. 0.01 d. 0.001
41. The largest atom of elements in size is..... atom.
a . cesium (Cs) b. fluorine (F) c. bromine (B)
42. The gas evolved on reacting alkali metals with water is
a. oxygen. b. hydrogen. c. nitrogen.
43. Elements of p-block are arranged in..... groups.
a. 2 b. 6 c. 10
44. Luminous meteors are formed in layer.
a. ionosphere b. stratosphere c. exosphere d. mesosphere
45. The transitional elements start to appear from period
a. 2 b. 3 c. 4 d. 5
46. An example of microfossils is
a. mammoth. b. ferns . c. radiolaria. d. archaeopteryx.
47. All of the following are greenhouse gases except
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48. When sodium reacts with water gas evolves.
a . N₂ b. O₂ c . H₂
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50. The scientist..... had discovered the main energy levels.
a. Bohr b . Moseley c . Mendeleev
51. is considered from halogens.
a. K b. Cl c . He
52. There are..... bonds among the water molecules.
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53. Ozone degree is measured in a unit called
a. km. b. Dobson. c. mm².

54. All of the following are from the greenhouse gases except

- a. CO₂ b. N₂O c. O₂

55. Halogens are non-metals.

- a. monovalent b. divalent c. trivalent

56. Meteors are burned in the

- a. ionosphere. . . b. mesosphere . c. . stratosphere.

57. The protectorate That protect gray bear is..... protectorate.

- a. Yellowstone b. Panda c. Ras Mohamed
b.

58. Scientist..... discovered the main energy levels in the atom.

- a. Bohr b. Mendeleev c. Moseley d. Hofmann

59. Aluminum oxide from oxides.

- a. amphoteric b. acidic c. nonmetallic d. basic

60. An example of extinct species

- a. panda bear. b. rhinoceros. c. quagga. d. papyrus plant.

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60. An example of extinct species
a. panda bear. b. rhinoceros. c. quagga. d. papyrus plant.



Final Revision

Mr. Ahmed Elbasha

✱ (1) Write the scientific term :

- 1) The continuous decrease in the number of a certain species of living organisms, without compensation until they all die out.
- 2) Traces and remains of old living organisms that are preserved in the sedimentary rocks.
- 3) Safe places that are specified to protect the endangered species in their homeland.
- 4) A charged layer reflects radio waves.
- 5) The ability of the atom in a covalent molecule to attract the electrons of the chemical bond towards itself.
- 6) Replacing part by part, the wood material of the trees by silica to form petrified fossils.
- 7) The continuous increase in the temperature of the Earth's near-surface air.
- 8) The region between stratosphere and mesosphere at which the temperature remains constant.
- 9) The halogen which exists in a liquid state.
- 10) The death of all members of certain species of living organisms.
- 11) A type of ultraviolet radiations that penetrates the ozone layer by a percentage 100%.
- 12) The weight of air column of an atmospheric height above a unit area.
- 13) One of components of the atmosphere that its percentage increased in recent years causing the greenhouse phenomenon
- 14) A table in which the elements are arranged according to their atomic numbers and the way of filling the energy sublevels with electrons.
- 15) It is a series in which metals are arranged in a descending order according to their chemical activity.
- 16) addition of any substance to the water which causes continuous gradual change in water properties affecting the health and the life of living creatures.
- 17) A type of ultraviolet radiations that is absorbed (95%) by the ozone layer.

- 18) It is the solidified resinous matter which was secreted by pine trees in old geologic ages.
- 19) Metals are arranged descendingly according to their chemical activity.
- 20) The apparatus which is used in water electrolysis.
- 21) A unit used for measuring ozone degree.
- 22) The death of all members of species of living organisms.
- 23) A bond that exists between water molecules.
- 24) The horizontal rows in the modern periodic table.
- 25) The radioactive element which is used in food preservation.
- 26) The decrease in the thickness of ozone layer.
- 27) The separating region between troposphere and stratosphere.
- 28) The gas which is collected at the cathode in water electrolysis.
- 29) The semi-conductor element which is used in electronics industry.
- 30) A liquid metal acts as a heat conductor in nuclear reactors for generating electricity.
- 31) The kind of bond which binds oxygen atom with hydrogen atom in water molecule.
- 32) A phenomenon that occurs due to the increase in the percentage of CO₂ gas and leads to
- 33) an increase in the planet Earth's temperature.
- 34) Colored bright curtains seen at the two poles.
- 35) A layer which plays an important role in wireless communications.
- 36) A phenomenon that appears as brightly coloured light curtains seen at both poles of the Earth.
- 37) The solidified resinous matter, which was secreted by pine trees during old geologic ages.
- 38) The block that contains the series of lanthanides and actinides.
- 39) An atmospheric layer at which the air moves vertically.
- 40) The strongest metal in group (1A)

- 41) type of ultraviolet radiation absorbed completely (100 %) by the ozone layer.
- 42) Fossils of living organisms lived for a short time in the past in a wide geographical range then became extinct.
- 43) A unit that measures the degree of ozone.
- 44) The elements that occupy the middle block (d) in the periodic table.
- 45) An area where the atmospheric envelope is inserted in outer space.
- 46) Elements where their valency shell contains more than four electrons.
- 47) A molecule produced from the union of an oxygen atom and its molecule.
- 48) A bond that exists between water molecules.
- 49) A device used to measure the elevations above sea level.
- 50) Safe areas established to protect the endangered species in their homeland.
- 51) The product of dissolving nonmetallic oxides in water.
- 52) Weak electrostatic attraction that arises between the molecules of the polar compounds.
- 53) The measuring unit of the atomic size of an element.
- 54) The number of protons inside the nucleus of the atom of an element.
- 55) The halogen which exists in a solid state.
- 56) The scientist who discovered that the atom contains positive protons in the nucleus.
- 57) Elements which have properties of metals and nonmetals.
- 58) Adding any substance to the water which changes its properties, affects the health and life of living organisms.
- 59) Two magnetic belts surrounding ionosphere and play an important role in scattering harmful charged cosmic radiations.
- 60) The apparatus which is used for water electrolysis.
- 61) A mammal between horse and zebra that extinct recently due to overhunting.

***(2) Choose the right answer:**

1..... is the lowest metallic element is group (1A).

- a. Na b. Cs c. K d. Li

2.The oxide which dissolves in water and produces an acid is

- a. MgO b. FeO c. CuO d . CO₂

3.The gas which is evolved on reacting alkali metals with water is

- a. oxygen. b. nitrogen. c. hydrogen. d. helium.

4.The volume of hydrogen gas evolving from water electrolysis is the volume of oxygen gas .

- a. equal to b. twice c. half d. four times

5.One dobson unit is defined as

- a. 3 mm. b. 0.1 mm. c. 0.01 mm. d . 2mm.

6.Elements of group (7 A) are known as

- a. inert gases. b. alkali metals.
c. halogens. d. alkaline Earth metals.

7.Meteors are burnt in layer.

- a. ionosphere b. stratosphere c. mesosphere d. thermosphere

8.Elements of the same period in the modern periodic table have the same

- a. number of energy levels. b. atomic number.
c. number of electrons in the outermost energy level. d. valency.

9..... protectorate is the first one established in Egypt.

- a. Ras Mohamed b. Wadi Hetan c. Saint Cathrine d. Petrified forest

10.Metal oxides are oxides.

- a. acidic b. basic c. both of them d. no correct answer

11.All of the following are greenhouse gases except

- a. CO₂ b. O₂ c. N₂O d. CH₄

12.Fossils are preserved in rocks .

- a. sedimentary b. igneous c. metamorphic d. no correct answer

13.There are bonds between water molecules.

- a. ionic b. covalent c. hydrogen d. metallic

14.The degree ozone layer is measured by a unit called

- a. km. b. dobson. c. nanometre. d. mm

15.Fossils are often found in rocks.

- a. metamorphic b. volcanic c. sedimentary d. igneous

16.The coldest atmospheric layer is

- a. troposphere. b. stratosphere. c. mesosphere. d. thermosphere.

17..... react very instantly with water and hydrogen gas evolves.

- a. K and Na b. Cu and Ag c. Zn and Fe d. Ca and Mg

18..... is a polar compound.

- a. Petrol b. Water c. Alcohol

19.The main energy levels discovered by Bohr in the atom are

- a. 7 b. 5 c. 3

20.The first layer in the atmospheric envelope above the sea level is

- a. mesosphere. b. stratosphere. c. troposphere.

21.Mammoth was preserved in

- a. resinous matter. b. snow. c. mud sediments.

22.Satellites orbit in layer.

- a. stratosphere b. exosphere c. mesosphere d. thermosphere

23.Which of the following fossils indicates that the environment, where they lived was a hot and rainy tropical environment ?

- a. Nummulites fossils. b. Ferns fossils. c. Coral fossils. d. Archaeopteryx fossils.

24.All of the following are ozone pollutants except

- a. methyl bromide gas. b. CO₂ c. halons. d. CFCs

25..... is located between stratosphere and mesosphere.

- a. Tropopause b. Stratopause c. Mesopause d. Thermopause

26..... is one of the most important causes of extinction in the recent ages.

- a. Volcanic eruption b. Falling of icebergs
c. Falling of meteorites d. Overhunting and environmental pollution

27.Which of the following fossils play an important role in petroleum exploration ?

- a. Foraminifera and radiolaria.
b. Foraminifera and trilobite.
c. Nummulites and ammonites.

28.The is/are used in preservation of agricultural crops.

- a. methyl bromide gas b. halons c. nitrogen oxide

29.The coldest atmospheric layer is

- a. troposphere. b. thermosphere. c. mesosphere.

30.The elements of group (7A) are known as

- a. alkali metals. b. halogens. c. alkaline earth metals.

31.Which of the following fossils indicates that the environment, where they lived was clear warm and shallow seas ?

- a. Nummulites fossils . b. Ferns fossils. c. Coral fossils.

32.The scientist had discovered the main energy levels.

- a. Moseley b. Bohr c. Hofmann d. Mendeleev

33.The atomic number of an element that exists in group (7 A) and period (2) is

- a. 12 b. 7 c. 9 d. 17

34.Each period in the periodic table starts with a/an

- a. metal. b. metalloid. c. nonmetal. d. inert gas.

35..... is considered from halogens.

- a. Sodium b. Chlorine c. Helium d. Calcium

36.Ozone layer is found in layer.

- a. troposphere b. stratosphere c. mesosphere d. thermosphere

37.Complete body fossils of insects are found preserved in

- a. amber. b. snow. c. ocean.

38.All of the following gases are greenhouse gases except

- a. CO₂ b. O₂ c. CH₄

39.The density of ice is the density of water.

- a. less than b. more than c. equal to

40.The normal atmospheric pressure at the sea level equals millibar.

- a. 1013.25 b. 76 c. 1.013

41.From the endangered species is

- a. dinosaur. b. bald eagle. c. dodo bird. d. quagga.

42.All of the following metals react with water except

- a. K b. Cu c. Na d. Mg

43. The volume of oxygen evolved during electrolysis of water is the volume of hydrogen.

- a. equals b. half c. twice d. four times

44. Bilharzia is from the harms resulted from water pollution.

- a. chemical b. thermal c. biological d. radiant

45. fossils indicate the environment where they lived was tropical , hot and rainy.

- a. Ferns b. Nummulites c. Coral d. Dinosaurs

46. Eating fish, which contain high concentration of causes the death of brain cells.

- a. mercury b. arsenic c. lead d. iron

47. The atmospheric envelope is inserted in the outer space in a region known as

- a. exosphere. b. ionosphere. c. stratopause. d. mesopause.

48. Ionosphere layer is surrounded by two belts.

- a. ionic b. electric c. heat d. magnetic

49. The replaces the wood material , part by part of an old tree.

- a. plastic b. iron c. silica d. copper

50. is an example of microfossils.

- a. Mammoth b. Fern c. Foraminifera d. Coral

51. The air in troposphere layer moves

- a. horizontally. b. vertically. c. inclined. d. no right answer.

52. Which of the following elements is located in the third period ?

- a. ${}_{19}\text{K}$ b. ${}_{6}\text{C}$ c. ${}_{3}\text{Li}$ d. ${}_{15}\text{P}$

53. Bilharzia is due to the pollution of water.

- a. biological b. thermal c. chemical

54. The atomic radius is measured in

- a. nanometre. b. picometre. c. kilometre.

55. A fossil that plays an important role in petroleum exploration is

- a. morgan . b. nummulites. c. foraminifera.

56. Ice crystals have shape.

- a. tetragonal b. pentagonal c. hexagonal

57. The element, whose atomic number is (15) is similar in its chemical properties as the element whose atomic number is

- a. 5 b. 7 c. 17 d. 19

58. Meteors are formed in

- a. thermosphere. b. mesosphere. c. stratosphere. d. troposphere.

59. Microfossils like

- a. mammoth. b. ferns. c. foraminifera. d. archaeopteryx.

60. protectorate is a natural protectorate in USA where grey bear is protected.

- a. Ras Mohamed b. Wadi El-Raiyan c. Bluestone d. Panda

61. Ozone layer prevents (100 %) of ultraviolet rays from passing to the Earth.

- a. near b. medium c. far d. (a) and (b) together

62. From the complete body fossils is

- a. mammoth. b. nummulites. c. fish.

63. The number of elements in the Earth's crust equals

- a. 118 b. 92 c. 120

64. is/are used in extinguishing fires.

- a. Methyl bromide b. Halons c. Nitrogen oxides d. UV radiation

65. The second layer of atmosphere is called

- a. mesosphere. b. troposphere. c. stratosphere. d. thermosphere.

66. The transition elements start to appear from the beginning of the period.

- a. second b. third c. fourth d. fifth

67. All of the following are from endangered species except

- a. papyrus plant. b. bald eagle. c. quagga. d. rhinoceros.

68. p-block contains groups.

- a. 10 b. 2 c. 6 d. 8

69. The inert gas that has the same electronic structure as (Na⁺) is

- a. 10Ne b. 2He c. 18Ar d. 17Cl

70. The modern periodic table contains elements.

- a. 26 b. 92 c. 100 d. 118

71. Which of the following is an acidic oxide ?

- a. CO₂ b. MgO c. Na₂O d. FeO

72. Which of the following is a radioactive element which is used in food preservation ?

- a. Liquid sodium. b. Liquefied nitrogen.
c. Cobalt 60. d. Water.

73. Water has high boiling point due to the presence of bonds between its molecules.

- a. hydrogen b. ionic c. covalent d. metallic

74. added group zero in his table for noble gases.

- a. Mendeleev b. Moseley c. Rutherford d. Einstein

75. Which of the following is the halogen that exists in a solid state ?

- a. Fluorine. b. Chlorine. c. Bromine. d. Iodine.

76. When putting a glass bottle completely filled with water in the freezer, it breaks because when water freezes its increases.

- a. temperature b. density c. volume d. acidity

77. Which of the following elements don't react with water ?

- a. K and Na b. Ca and Mg c. Zn and Fe d. Cu and Ag

78. What is the volume of hydrogen gas evolved from electrolysis of acidified water if you know that the volume of oxygen gas evolved is 2 cm^3 ?

- a. 1 cm^3 . b. 2 cm^3 . c. 4 cm^3 . d. 6 cm^3

79. From the extinct species is

- a. dodo bird. b. lion. c. panda.

80. The device that is used for determining the elevation from sea level is

- a. aneroid . b. altimeter. c. thermometer.

81. The atmospheric pressure on the top of a mountain is the atmospheric pressure at the sea level.

- a. more than b. less than c. equal to

82. Luminous meteors are formed in layer.

- a. ionosphere b. stratosphere c. exosphere d. mesosphere

83. The transitional elements start to appear from period

- a. 2 b. 3 c. 4 d. 5

84. An example of microfossils is

- a. mammoth. b. ferns . c. radiolaria. d. archaeopteryx.

85. When sodium reacts with water gas evolves.

- a. N_2 b. O_2 c. H_2

86. is considered from halogens.

- a. Sodium b. Chlorine c. Helium

✱(3) Complete the following :

1. Most of weather phenomena happen in layer.
2. Transition elements appear from period numberin the modern periodic table.
3. Archaeopteryx is the link between birds and
4. The ozone layer doesn't allow the penetration of all ultraviolet rays.
5. is an example of polar compounds.
6. Increasing of mercury concentration in drinking water causes
7. Fluorine and chlorine exist in state.
8. is from the negative effects of global warming phenomenon.
9. atomic size is measured by , but atmospheric pressure is measured by
10. ultraviolet radiation has a effect and the infrared radiation has a effect.
11. Eating fish which contains high concentration of lead causes ,
but drinking water which contains high concentration of mercury leads to
12. The highest temperature layer in the atmosphere is and the least temperature one is
13. Basic oxides are oxides and their solutions turn the litmus solution into
14. Alkali metals are good conductors of and
15. The height of atmospheric envelope above sea level is km, while the normal atmospheric pressure equals millibar.
16. $\text{CO}_2 + \text{H}_2\text{O} \rightarrow$
17. $\text{Br}_2 + 2\text{KI} \rightarrow$ +
18. Moseley arranged elements ascendingly according to, while Mendeleev arranged elements ascendingly according to The crystal of ice has shape.

19. Dodo bird is bird, while bald eagle isbird.
20. The scientist discovered the main energy levels in the atom.
21. There are bonds between water molecules.
22. The modern periodic table consists of horizontal periods and vertical groups.
23. By increasing the atomic number in groups, the atomic size due to the increase in the number of
24. andare examples of polar compounds.
25. The valency of alkali metal elements is
26.and are endangered species.
27. Pure water boils at and freezes at
28. From the reasons of recent extinction are and
29. The strongest metallic element is found in group
30. The thickness of mesosphere layer is aboutkm.
31. andare considered from ozone layer pollutants.
32. The normal atmospheric pressure at the sea level equalsmb.
33. Fossils always exist in the rocks.
34. Elements in group (1A) are called alkali metals as their elements react with formingsolutions.
35. The highest temperature layer in the atmosphere is and the lowest temperature one is
36. By increasing the atomic number, the value of metallic property in the groups of the periodic table.

37. Fluorine and chlorine exist in state, while iodine exists in state.
38. There are bonds between water molecules.
39. Elements that locate in the middle of the periodic table are called
40. Ozone layer is found in layer, while meteors are burnt in layer.
41. Elements of group (IA) are called , but elements of group (7 A) are called
42. The hottest atmospheric layer is , but the coldest atmospheric layer in the atmospheric envelope is
43. The transition elements start to appear from the beginning of the period and symbolized by letter
44. The bond between hydrogen atom and oxygen atom in water molecule is bond, while bonds among water molecules are bonds.
45. The atmospheric pressure at sea level equals mb.
46. The ultraviolet rays are three kinds which are , and
47. Sodium is kept under the surface of so , as not to react with
48. and are metals which don't react with water.
49. Archaeopteryx represents the link between and
50. Elements of s-block are located on the side of the periodic table and they are arranged in groups.
51. is used in food preservation.
52. The thickness of stratosphere is , while that of mesosphere is
53. Moseley put and series below the periodic table.
54. The valency of alkali metal elements is
55. Fossils are used in exploration and determination the age of
56. Fossils always exist in the

57. Ultraviolet radiations have effect, while infrared radiations have effect.
58. "d" block elements are called the elements.
59. and are from greenhouse gases.
60. Cobalt 60 has the ability to kill
61. and are from ozone layer pollutants .
62. The strongest nonmetal lies in group
63. When the atomic number increases in the same period, the metallic property
64. The safe areas established to protect endangered species are called
65. $\text{MgO} + \text{H}_2\text{O} \rightarrow$
66. The satellites rotate around the Earth in layer.
67. is from the examples of polar compounds because the difference in electronegativity between its elements is relatively
68. Mendeleev arranged the elements ascendingly according to , while Moseley arranged them ascendingly according to
69. The modern periodic table consists of horizontal periods and vertical groups.
70. Archaeopteryx is the link between and
71. During the electrolysis of acidified water by Hofmann's voltammeter, the gas evolves at the anode, while the gas evolves at the cathode.
72. The number of groups in p-block is in modern periodic table.
73. Sodium reacts with water to produce gas.
74. The measuring unit of atmospheric pressure is , while the measuring unit of ozone degree is
75. Elements of group (1A) are called

76. Most of weather features occur in layer.
77. Both sodium ($_{11}\text{Na}$) and potassium ($_{19}\text{K}$) are located in the same because they have the same number of
78. Ozone layer locates in layer.
79. Radiolaria fossil is an example of, but amber fossil is an example of
80. There are bonds between molecules of water
81. is an instrument used to determine the possible day weather, but to analysis the water by electricity.
82. Ultraviolet radiation has a effect, and the infrared radiation has a effect.
83. From the extinct animals in the old ages and
84. Fossils are used in exploration and determining the age of
85. Number of elements in Mendeleev's periodic table
86. Number of elements in the modern periodic table
87. Maximum number of energy levels
88. The angle between water molecules

✱(4) Correct the underlined words:

1	The ozone layer is found in <u>thermosphere</u> layer.	(.....)
2	<u>Aneroid</u> is an instrument used to determine the elevation of aeroplanes above sea level.	(.....)
3	Ice crystals have <u>round</u> shape	(.....)
4	<u>Copper</u> reacts instantly with water and hydrogen gas evolves.	(.....)
5	Elements of <u>p-block</u> are organized in two groups.	(.....)
6	Meteors burn in <u>thermosphere</u> layer.	(.....)
7	Infrared radiation has a <u>chemical</u> effect.	(.....)
8	Transition elements start to appear in the <u>first</u> period.	(.....)
9	Increasing <u>O₂</u> concentration in the atmosphere produces the global warming phenomenon.	(.....)
10	<u>Mammoth</u> is an example of microfossils.	(.....)
11	Sodium oxide is from <u>acidic</u> oxides.	(.....)
12	<u>Wadi El-Hetan</u> protectorate is the first established natural protectorate in Egypt.	(.....)
13	<u>Fluorine</u> is the only liquid halogen.	(.....)
14	Archaeopteryx links between reptiles and <u>mammals</u> .	(.....)
15	<u>Sodium chloride</u> is from polar compounds	(.....)
16	<u>Chlorine</u> element has the smallest atomic size.	(.....)
17	<u>Chemical</u> pollution of water causes many diseases as typhoid and hepatitis.	(.....)
18	The <u>thermometer</u> is an instrument used to measure the atmospheric pressure.	(.....)
19	<u>Rutherford</u> discovered the main energy levels.	(.....)

20	<u>Oil</u> is a covalent compound dissolves in water.	(.....)
21	Petrified wood is considered as <u>rocks</u> .	(.....)
22	Each period in the periodic table starts with <u>inert gas</u> .	(.....)
23	An element which is located in the 3rd period and group (2A) , its atomic number is <u>8</u>	(.....)
24	Mixing animals and human wastes with water causes <u>chemical</u> pollution.	(.....)
25	Eating food containing high percentage of lead causes <u>blindness</u> .	(.....)
26	Storing the tap water in plastic bottles cause the increase of infection of <u>hepatitis</u> .	(.....)
27	Radio waves are reflected and transmitted by communication centres in <u>stratosphere</u> .	(.....)
28	The elements with the same physical and chemical properties have been put in <u>horizontal periods</u> .	(.....)
29	All weather phenomena like rains , wind and clouds occur in the <u>ionosphere</u> .	(.....)
30	<u>Millibar</u> is the unit of measuring the ozone degree.	(.....)
31	Transition elements start from the <u>second</u> period.	(.....)
32	<u>Inert gases</u> have the properties of metals and nonmetals.	(.....)
33	<u>Hydrogen</u> used in preserving eye cornea.	(.....)
34	Fossils are often found in <u>igneous</u> rocks.	(.....)
35	Pure water has <u>acidic</u> effect on litmus paper.	(.....)
36	Ultraviolet radiation has <u>thermal</u> effect on the Earth.	(.....)
37	<u>Snow</u> is a solidified resinous matter secreted by pine trees.	(.....)
38	<u>Sodium</u> is used in making electronic slides.	(.....)
39	Cobalt 60 is used in preservation of <u>cornea of eye</u> .	(.....)

40	The ozone hole appears above the <u>middle east.</u>	(.....)
41	When the temperature of water decreases to less than <u>0°C</u> , its density decreases and, so it floats on water surface in the form of ice crystals.	(.....)
42	Mendeleev arranged the elements according to their <u>atomic number.</u>	(.....)
43	<u>Mammoth</u> fossil is an example of microfossils	(.....)
44	Dobson assumed that the natural amount of the ozone equals <u>100</u> Dobson units .	(.....)
45	Alkali metals are <u>bad</u> conductors of heat and electricity.	(.....)
46	<u>Bald eagle</u> is from the birds that can't fly because of its small wings.	(.....)
47	The elements of block (<u>P</u>) are organized in 10 groups in the periodic table.	(.....)
48	<u>Sodium</u> is considered as the most active metal in the periodic table.	(.....)
49	Elements of group 1A are known as <u>halogens.</u>	(.....)
50	<u>Covalent</u> bond is a weak electrostatic attraction force which arises among water molecules.	(.....)
51	<u>Coral</u> fossils indicate that the environment where they lived was hot and rainy tropical environment.	(.....)
52	If the metal lost one electron or more, it will become a <u>negative</u> ion.	(.....)
53	<u>The desert environment</u> is an example of the complex ecosystem.	(.....)
54	Panda bear is considered from <u>extinct</u> species.	(.....)
55	Infrared radiation has a <u>chemical</u> effect.	(.....)
56	<u>Wadi El-Raiyan</u> protectorate is the first established protectorate in South Sinai.	(.....)

★(5) Give reason for:

1. Water molecule is from polar compounds.
.....
2. The global warming phenomenon has negative effects on Earth.
.....
3. Simple ecosystem is affected strongly by the absence of one of its species .
.....
4. Dissolving of sugar in water although it is among covalent compounds.
.....
5. Water has high boiling point.
.....
6. Bromine cannot replace chlorine in sodium chloride.
.....
7. The atomic size increases in the same group by increasing the atomic number.
.....
8. Reaction of potassium with water is stronger than that of sodium with water.
.....
9. Silicon slides are used in making electronics as computers .
.....
10. Magnesium oxide is a basic oxide.
.....
11. Ozone layer is formed in stratosphere.
.....
12. Complicated ecosystem is not affected much by the absence of one of its species.
.....
13. Cesium is the most active metal in group (1A).
.....
14. Sugar dissolves in water.
.....
15. Van-Allen belts play an important role in atmosphere.
.....

16. Although sugar is a covalent compound, it dissolves in water.

.....

17. The lower part of stratosphere is suitable for flying aeroplanes.

.....

18. Liquefied nitrogen is used in preservation of the eye cornea.

.....

19. Cobalt 60 is used in food preservation.

.....

20. Elements of the same group have similar properties.

.....

21. Occurrence of extinction in the recent ages.

.....

22. Sodium is kept under the surface of kerosene.

.....

23. The atomic size decreases in periods by increasing the atomic number.

.....

24. Liquefied nitrogen is used in preservation of cornea of the eye.

.....

25. Water density decreases on freezing.

.....

26. Chlorine replaces bromine in potassium bromide solution.

.....

27. Dodo bird was an easy target for hunters.

.....

28. The ozone layer acts as a protective shield for living organisms.

.....

29. Adding drops of dilute acid to water during its electrolysis.

.....

30. Pure water doesn't affect blue and red litmus papers.

.....

31. Potassium reacts with water instantly and faster than sodium.

.....

***(6) What happen if:**

1. Storing drinking water in plastic bottles.

.....

2. The overuse of methyl bromide as an insecticide.

.....

3. The resinous matter, which was secreted by pine trees falls on an insect.

.....

4. Overuse of Freon.

.....

5. Eating fish contains high concentration of lead.

.....

6. Putting a magnesium strip in a test tube containing oxygen.

.....

7. Dissolving magnesium oxide in water.

.....

8. passage of electricity in Hofmann's voltammeter containing acidic water.

.....

9. The pollution of water with animals and human wastes.

.....

10. There is no ionosphere layer at the end of thermosphere.

.....

11. Decreasing water temperature to less than 4°C.

.....

*** (7) Put (\checkmark) or (X) :**

1. Nonmetal oxides dissolve in water forming acidic solutions. ()
2. Silicon slides are good conductors of electricity. ()
3. The air moves vertically in the bottom part of the stratosphere. ()
4. Alkali metals locate in group (2A) . ()
5. Ice crystals have pentagonal shapes. ()
6. In the period as the atomic number increases, the atomic size increases. ()
7. The index fossil indicates the age of the sedimentary rocks . ()
8. Mammoth and dinosaur are old extincted animals. ()
9. Halogens are monovalent elements. ()
10. Solutions of metal oxides turn blue litmus papers into red. ()
11. Infrared radiations have chemical effect. ()
12. The atomic size increases in the group by increasing the atomic number. ()
13. Tropical forest is considered as simple ecosystem. ()
14. Increasing the concentration of mercury in water causes blindness. ()
15. Amber is a complete body fossil. ()
16. Wadi El-Hetan protectorate is the first established protectorate in Egypt. ()
17. The troposphere is the first layer in the atmospheric envelope. ()
18. The millibar is the unit of measuring the ozone degree. ()
19. The dinosaur is the most famous extinct species recently. ()
20. All periods start with a metal element. ()
21. Mesosphere is the layer which is responsible for burning of meteors. ()
22. Ozone layer totally absorbs all kinds of ultraviolet radiations. ()
23. Tellurium is a metalloid. ()
24. Complicated ecosystem contains two species. ()
25. Petrified woods look like rocks and are considered as fossils. ()
26. Altimeter is a kind of barometers. ()
27. Water and ammonia are non-polar compounds. ()
28. Liquefied sodium is used in preservation of cornea of the eye. ()
29. The atomic size decreases in periods as the atomic number increases. ()

30.Lacking of plants on the Earth leads to the increase in the temperature.	()
31.Halogens are from monovalent metals.	()
32.Bohr had discovered the main energy levels.	()
33.Each period starts with a weak metal.	()
34.The ozone layer locates at altitude from 20 - 40 km above sea level.	()
35.Water and ammonia are from polar compounds.	()
36.Mendeleev arranged the elements ascendingly according to their atomic number.	()
37.Dodo bird and Quagga are from extinct species in the recent time.	()
38.Water and ammonia are non-polar compounds.	()
39.Eating fish which contain high percentage of lead causes blindness.	()
40.Liquefied sodium is used in the preservation of the eye cornea.	()
41.Ozone layer is formed in troposphere layer.	()
42.The satellites revolve around the Earth in a region called the troposphere.	()
43.Tropical forest is an example of simple ecosystem	()
44.Water molecules are linked together by ionic bond.	()
45.Meteors are burnt in thermosphere layer.	()
46.Dobson is the unit of measuring the ozone degree.	()
47.The air moves horizontally in the lower part of the stratosphere.	()
48.Copper metal doesn't react with water.	()
49.The unit of measuring atomic radius is Dobson unit.	()
50.The pilots prefer to fly in mesosphere.	()
51.Papyrus is considered as an extinct plant.	()
52.Hydrogen evolves at positive pole in Hofmann's voltameter.	()
53.Burning carbon produces basic oxide.	()
54.Coral fossils indicate that their environment was clear warm shallow seas.	()
55.Ferns fossils indicate that the environment where they lived was a sea floor.	()
56.Density of ice is more than that of water.	()
57.Stratosphere is the coldest layer in the atmosphere.	()
58.Ice crystals have pentagonal shapes .	()
59.Infrared radiation has a chemical effect.	()

*** (8) Mention one example for each of the following :**

1. Halogen exists in a solid state.

.....

2. The strongest metallic element.

.....

3. Covalent compound cannot dissolve in water.

.....

4. Extinct bird in recent time.

.....

5. Greenhouse gases.

.....

6. Fossil of a complete body.

.....

7. Endangered plant.

.....

8. An extinct bird recently.

.....

9. Trace fossil.

.....

*** (9) Write the balanced chemical equations which express the following reactions :**

1. Magnesium with dil. hydrochloric acid.

.....

2. Bromine with potassium iodide.

.....

3. The formation of ozone by the effect of ultraviolet radiation.

.....

4. Decomposition of acidified water by electricity into two elements hydrogen and oxygen.

.....

5. Reaction of sodium with water.

.....

6. Reaction of carbon dioxide gas with water.

.....

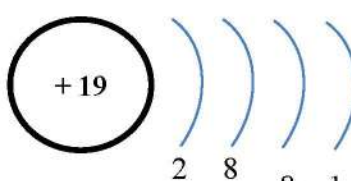
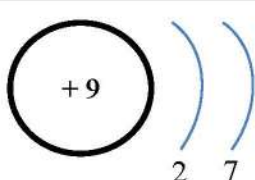
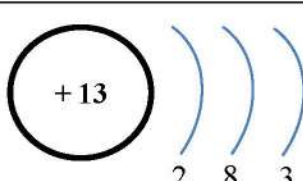
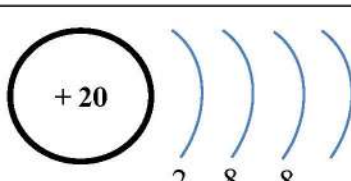
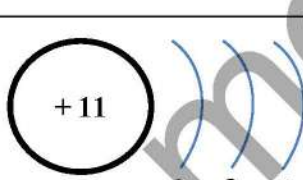
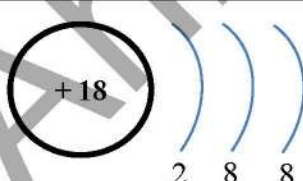
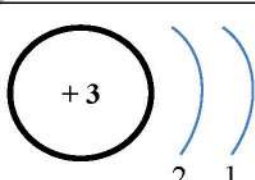
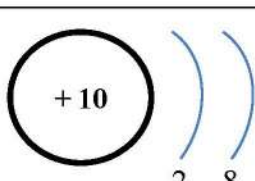
7. Reaction of chlorine gas with potassium bromide solution.

.....

8. Potassium iodide with bromine.

.....

★(10) Locate the position of the following elements in the modern periodic table with showing your steps :

	symbol	Location
1	$_{19}K$	 <p>Group : Period :</p>
2	$_9F$	 <p>Group : Period :</p>
3	$_{13}Al$	 <p>Group : Period :</p>
4	$_{20}Ca$	 <p>Group : Period :</p>
5	$_{11}Na$	 <p>Group : Period :</p>
6	$_{18}Ar$	 <p>Group : Period :</p>
7	$_3Li$	 <p>Group : Period :</p>
8	$_{10}Ne$	 <p>Group : Period :</p>

*(11) Problems

1

Using the following diagram which represents a part of the periodic table, answer the following questions :

${}_1\text{H}$																			${}_2\text{He}$
3	X									5	6	Y	8	9	10				
11	12												Z	17	G				
19	M					N										35		36	Kr

1. Write the letter(s) of the element(s) which is/are :

- (1) among transition elements.
- (2) located in period (3) and group (6A).
- (3) among noble gases.
- (4) considered among s-block.
- (5) considered among p-block.

2. Choose :

(1) The letter (Y) represents element.

a. ${}_9\text{F}$

b. ${}_8\text{O}$

c. ${}_{12}\text{Mg}$

d. ${}_7\text{N}$

(2) The letter (M) represents element.

a. ${}_{12}\text{Mg}$

b. ${}_{16}\text{S}$

c. ${}_{20}\text{Ca}$

d. ${}_{18}\text{Ar}$

(3) The letter (N) is located in block.

a. s

b. p

c. d

d. f

3. What is the atomic number of the elements (N) and (G) ?

.....

.....

.....

2

If the temperature at sea level is 24.5°C , find the temperature at the top of troposphere layer if its thickness is 13 kilometer.

.....

.....

.....

.....

3

"Ozone layer is found in the stratosphere layer, it's important to protect the life of organisms"

1. What is the average thickness of ozone layer in atmosphere ?

2. What is the only element that forms ozone gas ?

3. **Complete :**

a. Ozone layer protects the Earth from the harmful effects of radiation.

b. The thickness of ozone layer at STP is

4. **Put (√) or (X):** Ozone layer prevents penetration of all types of UV radiation.

.....

.....

.....

.....

.....

.....

.....

4

Calculate the temperature at the top of a mountain, which its height is 4 km. If the temperature at the base of that mountain is 24°C.

.....

.....

.....

.....

.....

5

Choose from column (B) what suits it in column (A) :

(A) Harms	(B) Pollutant
1. Death of brain cells.	a. lead.
2. Liver cancer.	b. sodium.
3. Blindness.	c. mercury.
	d. arsenic.

1-

2-

3-

6

From the following diagram which represents a part of the periodic table, answer the following questions :

[illegible]

[NB. The letters in the table don't represent the actual symbols of the elements]

1. Arrange the elements B, A, R, L descendingly according to the atomic size.
2. Complete the following :

The shaded part represents elements.

3. Write the letter(s) of the element(s) which :
- (a) Belong(s) to d-block. (b) is/are from inert gases.
- (c) Belong(s) to alkali metals.

7

Calculate the height of a mountain if the temperature at its base is (30°C) and at its top is (-9°C).

8

Study the following figure which represents a section of the periodic table, then answer :

														N		
A												I	K		L	
	C											H				O
B				D			E		F		G		J			M

[NB. The letters in the table don't represent the actual symbols of the elements]

Write the symbol(s) which indicate(s) :

- a. Halogens.
- b. Inert gases.
- c. The most active metal.
- d. Transition elements.

9

If the temperature at the sea level is 20.6°C . Find the temperature at the top of a mountain of height 2 km above Earth's surface.

.....

.....

.....

10

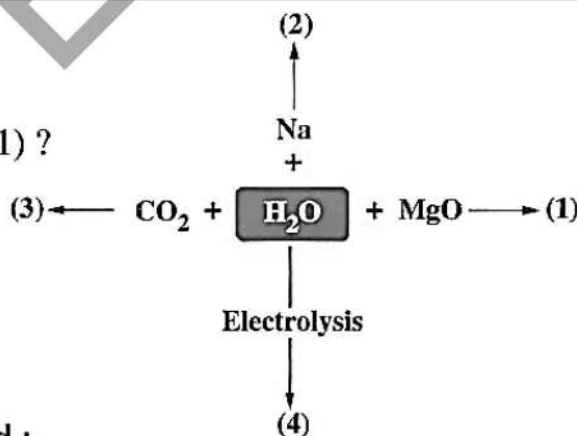
Calculate the atomic number of :

1. Element (X) is located in the 3rd period and group (2A).
 2. Element (Y) is located in the 1st period and group (1A).
-
-
-

11

In the opposite figure :

1. Write the products of reactions (1) , (2) , (3).
2. What is the type of solution resulted in reaction (1) ?
3. What is the effect of the product of reaction (3) on the litmus paper ? Why ?
4. In reaction (4), hydrogen gas evolves at , while oxygen gas evolves at



Mention the name of the scientist who discovered :

1. Normal degree of ozone.
 2. Protons inside nucleus.
 3. Added zero group to the periodic table.
 4. Main energy levels.
-
-
-
-
-
-

12

Choose from column (B) what suits it in column (A) :

(A)	(B)
1. Liquid sodium	a. is used in preservation of food.
2. Liquefied nitrogen	b. is used in manufacture of electronic devices.
3. Cobalt 60	c. is used in nuclear reactors.
4. Silicon slides	d. is used in preservation of cornea of the eye.

1-

2-

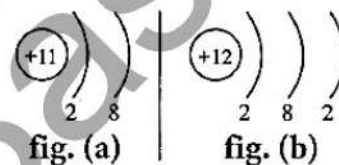
3-

4-

13

Study the opposite figures and answer the following questions :

- Which figure represents a positive ion ?
- Which figure represents a neutral atom ?
- Determine the position of the atom in the periodic table.



14

The opposite figure shows the reaction of sodium and water :

- Write the balanced chemical equation of the reaction.
- Name the gas produced and how you can test about it.



15

A metallic element (X) lies in the third period and group (1A) in the modern periodic table:

- Draw the electronic distribution of this element.
- Mention the atomic number of this element.
- What is the block that this element belongs to ?
- What is the valency of this element ?

Model Answer

★ (1) Write the scientific term :

- | | | | |
|--------------------------|------------------------------|--------------------------|--------------------------|
| 1. Extinction | 15. Chemical activity series | 30. Sodium | 45. Exosphere |
| 2. Fossil | 16. Water pollution | 31. Single covalent bond | 46. Nonmetals |
| 3. Natural protectorate | 17. Medium ultraviolet rays | 32. Global warming | 47. Ozone |
| 4. Ionosphere | 18. Amber | 33. Global warming | 48. Hydrogen bond |
| 5. Electronegativity | 19. Chemical activity series | 34. Aurora phenomenon | 49. Altimeter |
| 6. Petrification | 20. Hofmann voltmeter | 35. Ionosphere | 50. Natural protectorate |
| 7. Global warming | 21. Dobson | 36. Aurora phenomenon | 51. Acidic oxide |
| 8. Stratopause | 22. Extinction | 37. Amber | 52. Hydrogen bond |
| 9. Bromine | 23. Hydrogen bond | 38. F-block | 53. Picometer |
| 10. Extinction | 24. Period | 39. Troposphere | 54. Atomic number |
| 11. Near ultraviolet | 25. Cobalt 60 | 40. Cesium | 55. Iodine |
| 12. Atmospheric pressure | 26. Ozone hole | 41. Far ultraviolet | 56. Rutherford |
| 13. Carbon dioxide | 27. Tropopause | 42. Index fossil | 57. Metalloid |
| 14. Periodic table | 28. Hydrogen | 43. Dobson | 58. Water pollution |
| | 29. Silicon | 44. Transition element | 59. Van Allen belt |
| | | | 60. Hofmann voltmeter |
| | | | 61. Quagga |

★(2) Choose the right answer:

- | | | | | |
|-------|-------|-------|-------|-------|
| 1. D | 20. C | 40. A | 60. A | 80. B |
| 2. D | 21. B | 41. B | 61. C | 81. B |
| 3. C | 22. B | 42. B | 62. A | 82. D |
| 4. B | 23. B | 43. C | 63. B | 83. C |
| 5. A | 24. B | 44. C | 64. B | 84. C |
| 6. C | 25. B | 45. A | 65. C | 85. C |
| 7. C | 26. D | 46. C | 66. C | 86. B |
| 8. A | 27. A | 47. A | 67. C | |
| 9. A | 28. A | 48. A | 68. C | |
| 10. B | 29. C | 49. C | 69. A | |
| 11. B | 30. B | 50. C | 70. D | |
| 12. A | 31. C | 51. B | 71. A | |
| 13. C | 32. B | 52. D | 72. C | |
| 14. B | 33. C | 53. A | 73. A | |
| 15. C | 34. A | 54. B | 74. B | |
| 16. C | 35. B | 55. C | 75. D | |
| 17. A | 36. B | 56. C | 76. C | |
| 18. B | 37. A | 57. B | 77. D | |
| 19. A | 38. B | 58. B | 78. C | |
| | 39. A | 59. C | 79. A | |

*(3) Complete the following :

- | | | | |
|--------------------------------------|-------------------------------------|---------------------------------------|---|
| 1. Troposphere | 23. Increase – energy levels | 45. 1013.25 | 67. Water – high |
| 2. Four | 24. Water – ammonia | 46. Near , medium – far | 68. Atomic weight – atomic number |
| 3. Reptiles | 25. Monovalent | 47. Kerosene - Water | 69. 7 – 18 |
| 4. Far | 26. Panda – blade eagle | 48. Ag – Cu | 70. Bird – reptiles |
| 5. Water | 27. 100 – 0 | 49. Retiles –birds | 71. Oxygen - Hydrogen |
| 6. Blindness | 28. Overhunting – climatic change | 50. Left – two | 72. 6 |
| 7. Gas | 29. Al | 51. Cobalt 60 | 73. Hydrogen |
| 8. Increase temperature | 30. 35 | 52. 37 – 35 | 74. Bar – Dobson |
| 9. Picometer – bar | 31. Halons – nitrogen oxide | 53. Lanthanides – actinides | 75. Alkali metals |
| 10. Chemical – thermal | 32. 1013.25 | 54. Monovalent | 76. Troposphere |
| 11. Death of brain cells – blindness | 33. Sedimentary | 55. Petroleum – sedimentary rocks | 77. Group – electrons in outermost energy level |
| 12. Thermosphere – mesosphere | 34. Water - alkaline | 56. sedimentary rocks | 78. Stratosphere |
| 13. Base – blue | 35. Thermosphere – mesosphere | 57. Chemical – thermal | 79. Microfossil – complete fossil |
| 14. Heat – electricity | 36. Increase | 58. Transition | 80. Hydrogen |
| 15. 1000 - 1013.25 | 37. Gas – solid | 59. CO ₂ – CH ₄ | 81. Aneroid – Hofmann voltmeter |
| 16. H ₂ CO ₃ | 38. Hydrogen | 60. Microbes | 82. Chemical – thermal |
| 17. KBr + I ₂ | 39. Transition element | 61. Halons – nitrogen oxide | 83. Dinosaurs – mammoth |
| 18. Atomic number – atomic weight | 40. Stratosphere – mesosphere | 62. 7A | 84. Petroleum |
| 19. Extinction – endangered | 41. Alkali metals – halogen | 63. Decrease | 85. 67 |
| 20. Bohr | 42. Thermosphere – mesosphere | 64. Natural protectorate | 86. 118 |
| 21. Hydrogen | 43. Four – d | 65. Mg(OH) ₂ | 87. 7 |
| 22. 7 – 18 | 44. Single covalent bond – hydrogen | 66. Exosphere | 88. 104.5 |

✱(4) **Correct the underlined words:**

1. Stratosphere	23. 12	45. Good
2. Altimeter	24. Biological	46. Dodo birds
3. Hexagonal	25. Death of brain cell	47. D
4. Sodium	26. Cancer	48. Cesium
5. S-block	27. Ionosphere	49. Alkali metals
6. Mesosphere	28. Vertical group	50. Hydrogen
7. Thermal	29. Troposphere	51. Ferns
8. Fourth	30. Dobson	52. Positive
9. CO ₂	31. Fourth	53. Tropical
10. Radiolaria	32. Metalloid	54. Endangered
11. Basic	33. Liquefied nitrogen	55. Thermal
12. Ras Mohamed	34. Sedimentary	56. Ras Mohamed
13. Bromine	35. Neutral	
14. Birds	36. Chemical	
15. Water	37. Amber	
16. Fluorine	38. Silicon	
17. Biological	39. Food	
18. Barometer	40. South pole	
19. Bohr	41. 4 degree	
20. Sugar	42. Atomic weight	
21. Fossils	43. Radiolaria	
22. Metal	44. 300	

***(5) Give reason for:**

- 1- Because of the electronegativity difference between its elements is relatively high
- 2- Because Global warming will cause:
 - 1 .Melting of polar ice which threats coastal areas – extinction of some polar animals like polar bear and seals.
 2. Severe climate changes Tropical hurricanes - Destructive floods - Drought waves – Forests fire.
- 3- Because it has small alternatives
- 4- Because sugar forms a hydrogen bond with water.
- 5- Due to the presence of hydrogen bonds between water molecules
- 6- Because bromine is less active than chlorine
- 7- Because the attraction force between positive nucleus and the electrons in the outermost energy level increases, therefore atomic radius decreases , so atomic size decreases.
- 8- Because its atomic size is greater than that of sodium and more active than it
- 9- Because it is semi-conductor
- 10- Because it dissolves in water forming alkalis which turn the color of litmus solution into blue
- 11- Because it contains a suitable amount of oxygen gas
- 12- Because it has many alternatives
- 13- Because the metallic property increases in groups by increasing the atomic number
- 14- Because sugar forms a hydrogen bond with water
- 15- Because these two belts play an important role in dispersing harmful charged cosmic radiation away from the Earth
- 16- Because sugar forms a hydrogen bond with water
- 17- Because it doesn't contain clouds or suffer from any weather disturbances and the air moves in this part horizontally
- 18- Due to the decrease of its boiling point.
- 19- Because it radiates (produces) gamma rays which prevent the reproduction of microbes
- 20- Because they have the same number of electrons in the outermost energy level.
- 21- Due to over hunting
- 22- Because they are metals which reacts strongly with water
$$2\text{Na} + 2\text{H}_2\text{O} \rightarrow 2\text{NaOH} + \text{H}_2$$
- 23- Because the attraction force between positive nucleus and the electrons in the outermost energy level increases, therefore atomic radius decreases , so atomic size decreases
- 24- Due to the decrease of its boiling point
- 25- Because it's volume increase
- 26- Because it is more active than bromine
- 27- Because it can't fly
- 28- Because it does not allow penetration of all far and medium ultraviolet radiations, which have very harmful effects
- 29- Because pure water is bad conductor of electricity
- 30- Because when water ionizes, it gives equal numbers of +ve hydrogen ions (H^+) and –ve hydroxide ions (OH^-).
- 31- Because it is more active than sodium

*(6) What happen if:

1. Plastic will react with chlorine gas leading to the increase in the infection rates by cancer
2. Ozone layer will be continuously eroded and ozone hole will be bigger.
3. It will make complete fossil
4. Ozone layer will be continuously eroded and ozone hole will be bigger.
5. It causes the death of brain cells.
6. It burns with bright light and magnesium oxide is formed. $2Mg + O_2 \xrightarrow{\Delta} 2MgO$
7. It forms alkalis which turn the color of litmus solution into blue. $MgO + H_2O \rightarrow Mg(OH)_2$
8. **1. Acidified water decomposes by electricity into:**
Oxygen gas evolves at the anode (because oxygen ions are negative)
Hydrogen gas evolves at the cathode (because hydrogen ions are positive)
2- The volume of hydrogen is twice the volume of oxygen.
Because water molecule H_2O is composed of two hydrogen atoms and one oxygen atom
$$H_2O \xrightarrow{\text{electrolysis}} O_2 + H_2$$
9. It causes many diseases such as: Bilharzia, typhoid and hepatitis.
10. We can't make wireless communications and broadcasting
11. Water molecules are collected and form crystal of hexagonal shape

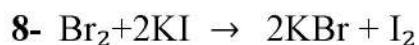
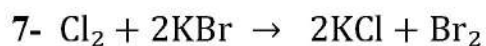
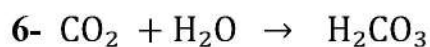
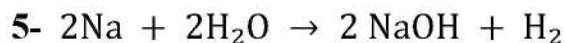
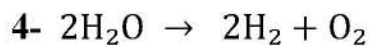
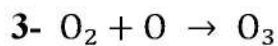
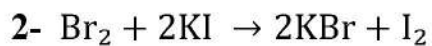
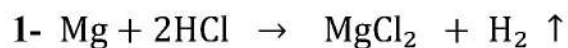
*(7) Put (✓) or (X) :

1. (✓)	11. (X)	21. (✓)	31. (X)	41. (X)	51. (X)
2. (✓)	12. (✓)	22. (X)	32. (✓)	42. (X)	52. (X)
3. (X)	13. (X)	23. (✓)	33. (X)	43. (X)	53. (X)
4. (X)	14. (✓)	24. (X)	34. (✓)	44. (X)	54. (✓)
5. (X)	15. (✓)	25. (✓)	35. (✓)	45. (X)	55. (✓)
6. (X)	16. (X)	26. (✓)	36. (X)	46. (✓)	56. (X)
7. (✓)	17. (✓)	27. (X)	37. (✓)	47. (✓)	57. (X)
8. (✓)	18. (X)	28. (X)	38. (X)	48. (✓)	58. (X)
9. (✓)	19. (X)	29. (✓)	39. (X)	49. (X)	59. (X)
10. (X)	20. (✓)	30. (✓)	40. (✓)	50. (X)	

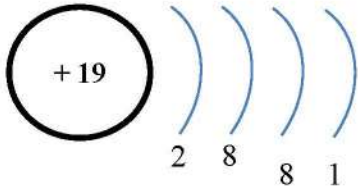
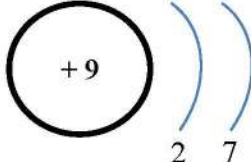
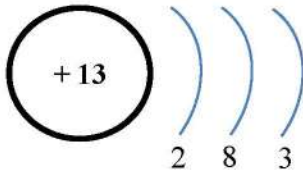
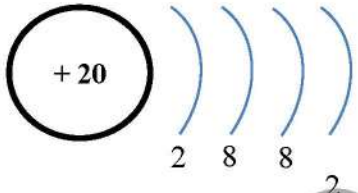
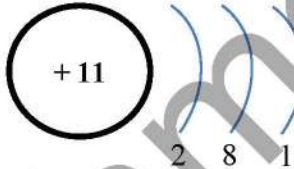
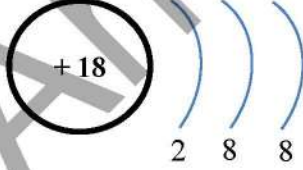
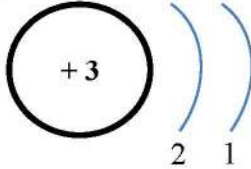
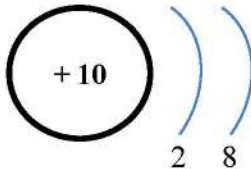
*(8) Mention one example for each of the following :

1. Iodine
2. Cesium
3. Oil
4. Dodo bird
5. CO_2
6. Mammoth
7. Papyrus
8. Dodo bird
9. Worm's tunnel

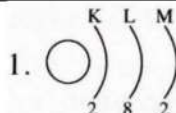
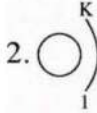
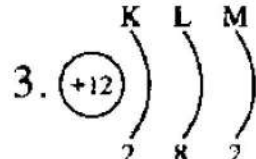
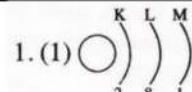
✳(9) Write the balanced chemical equations which express the following reactions :



***(10) Locate the position of the following elements in the modern periodic table with showing your steps :**

	symbol	Location
1	$_{19}K$	 <p>Group : 1A Period : 4</p>
2	$_9F$	 <p>Group : 7A Period : 2</p>
3	$_{13}Al$	 <p>Group : 3A Period : 3</p>
4	$_{20}Ca$	 <p>Group : 2A Period : 4</p>
5	$_{11}Na$	 <p>Group : 1A Period : 3</p>
6	$_{18}Ar$	 <p>Group : zero Period : 3</p>
7	$_3Li$	 <p>Group : 1A Period : 2</p>
8	$_{10}Ne$	 <p>Group : zero Period : 2</p>

*(11) Problems

1	1. (1) N (2) Z (3) G (4) X and M (5) Y, Z and G 2. (1) d (2) c (3) c 3. (N) = 24 (G) = 18	9	- The temp. at the top of the mountain = the temp. at sea level – the decrease in temp. = $20.6 - (2 \times 6.5)$ = $20.6 - 13 = 7.6^{\circ}\text{C}$
2	- The decrease in temperature = Height (km) $\times 6.5^{\circ}\text{C}$ = $13 \times 6.5 = 84.5^{\circ}\text{C}$ - The temperature at the top of troposphere = temperature at sea level – the decrease in temperature = $24.5 - 84.5 = -60^{\circ}\text{C}$	10	1.  Atomic number of element (X) = $2 + 8 + 2 = 12$ 2.  Atomic number of element (Y) = 1
3	1. 20 km thickness. 2. oxygen. 3. a. ultraviolet b. 3 mm. 4. (x)	11	1. (1) $\text{Mg}(\text{OH})_2$ (2) NaOH / H_2 (3) H_2CO_3 2. Alkaline solution. 3. It turns litmus paper into red, because it is an acidic solution. 4. the cathode - the anode.
4	- The temp. at the top of the mountain = the temp. at its base – the decrease in temp. = $24 - (4 \times 6.5) = 24 - 26 = -2^{\circ}\text{C}$	12	1. c 2. d 3. a 4. b
5	1. a 2. d 3. c	13	1. fig. (a). 2. fig. (b). 3.  period (3) group (2A)
6	1. $A > B > L > R$ 2. Metalloid 3. (a) N (b) H (c) E, A and C	14	1. $2\text{Na} + 2\text{H}_2\text{O} \longrightarrow 2\text{NaOH} + \text{H}_2 \uparrow$ 2. Hydrogen gas, by approaching a burning match to it, it burns with a pop sound.
7	- The temperature at the top of mountain = temperature at its base – the decrease in temperature - $9 = 30 - \text{the decrease in temperature}$ - The decrease in temp. = $30 + 9 = 39^{\circ}\text{C}$ $\therefore 39 = \text{Height (km)} \times 6.5^{\circ}\text{C}$ So, height of the mountain = $\frac{39}{6.5} = 6 \text{ km.}$	15	1. (1)  (2) 11 (3) s-block. (4) Monovalent.
8	a. L and M b. N and O c. B d. D, E, F and G		



Mini Revision

Mr. Ahmed Elbasha

*** (1) Choose the right answer:**

1. Elements of group (7 A) are known as

- a. inert gases.
- b. alkali metals.
- c. halogens.
- d. alkaline Earth metals.

2. Meteors are burnt in layer.

- a. ionosphere
- b. stratosphere
- c. mesosphere
- d. thermosphere

3. Elements of the same period in the modern periodic table have the same

- a. number of energy levels.
- b. atomic number.
- c. number of electrons in the outermost energy level.
- d. valency.

4. protectorate is the first one established in Egypt.

- a. Ras Mohamed
- b. Wadi Hetan
- c. Saint Cathrine
- d. Petrified forest

5. Metal oxides are oxides.

- a. acidic
- b. basic
- c. both of them
- d. no correct answer

6. All of the following are greenhouse gases except

- a. CO₂
- b. O₂
- c. N₂O
- d. CH₄

7. Fossils are preserved in rocks .

- a. sedimentary
- b. igneous
- c. metamorphic
- d. no correct answer

8. There are bonds between water molecules.

- a. ionic
- b. covalent
- c. hydrogen
- d. metallic

9. The degree ozone layer is measured by a unit called

- a. km.
- b. dobson.
- c. nanometre.
- d. mm

10. Fossils are often found in rocks.

- a. metamorphic
- b. volcanic
- c. sedimentary
- d. igneous

11. The coldest atmospheric layer is

- a. troposphere.
- b. stratosphere.
- c. mesosphere.
- d. thermosphere.

12. react very instantly with water and hydrogen gas evolves.

- a. K and Na
- b. Cu and Ag
- c. Zn and Fe
- d. Ca and Mg

13..... is a polar compound.

- a. Petrol b. Water c. Alcohol

14.The main energy levels discovered by Bohr in the atom are

- a. 7 b. 5 c. 3

15.The first layer in the atmospheric envelope above the sea level is

- a. mesosphere. b. stratosphere. c. troposphere.

16.Mammoth was preserved in

- a. resinous matter. b. snow. c. mud sediments.

17.Satellites orbit in layer.

- a. stratosphere b. exosphere c. mesosphere d. thermosphere

18.Which of the following fossils indicates that the environment, where they lived was a hot and rainy tropical environment ?

- a. Nummulites fossils. b. Ferns fossils . c. Coral fossils. d. Archaeopteryx fossils.

19.All of the following are ozone pollutants except

- a. methyl bromide gas. b. CO₂ c. halons. d. CFCs

20..... is located between stratosphere and mesosphere.

- a. Tropopause b. Stratopause c. Mesopause d. Thermopause

21..... is one of the most important causes of extinction in the recent ages.

- a. Volcanic eruption b. Falling of icebergs
c. Falling of meteorites d. Overhunting and environmental pollution

22.Which of the following fossils play an important role in petroleum exploration ?

- a. Foraminifera and radiolaria.
b. Foraminifera and trilobite.
c. Nummulites and ammonites.

23.The is/are used in preservation of agricultural crops.

- a. methyl bromide gas b. halons c. nitrogen oxide

24.The coldest atmospheric layer is

- a. troposphere. b. thermosphere. c. mesosphere.

25.The elements of group (7A) are known as

- a. alkali metals. b. halogens. c. alkaline earth metals.

26. Which of the following fossils indicates that the environment, where they lived was clear warm and shallow seas ?

- a. Nummulites fossils . b. Ferns fossils. c. Coral fossils.

27. The scientist had discovered the main energy levels.

- a. Moseley b. Bohr c. Hofmann d. Mendeleev

28. The atomic number of an element that exists in group (7 A) and period (2) is

- a. 12 b. 7 c. 9 d. 17

29. Each period in the periodic table starts with a/an

- a. metal. b. metalloid. c. nonmetal. d. inert gas.

30. is considered from halogens.

- a. Sodium b. Chlorine c. Helium d. Calcium

31. Ozone layer is found in layer.

- a. troposphere b. stratosphere c. mesosphere d. thermosphere

32. Complete body fossils of insects are found preserved in

- a. amber. b. snow. c. ocean.

33. All of the following gases are greenhouse gases except

- a. CO₂ b. O₂ c. CH₄

34. The density of ice is the density of water.

- a. less than b. more than c. equal to

35. The normal atmospheric pressure at the sea level equals millibar.

- a. 1013.25 b. 76 c. 1.013

36. From the endangered species is

- a. dinosaur. b. bald eagle. c. dodo bird. d. quagga.

37. All of the following metals react with water except

- a. K b. Cu c. Na d. Mg

38. The volume of oxygen evolved during electrolysis of water is the volume of hydrogen.

- a. equals b. half c. twice d. four times

39. Bilharzia is from the harms resulted from water pollution.

- a. chemical b. thermal c. biological d. radiant

40. fossils indicate the environment where they lived was tropical , hot and rainy.

- a. Ferns b. Nummulites c. Coral d. Dinosaurs

41. Eating fish, which contain high concentration of causes the death of brain cells.

- a. mercury b. arsenic c. lead d. iron

42. The atmospheric envelope is inserted in the outer space in a region known as

- a. exosphere. b. ionosphere. c. stratopause. d. mesopause.

43. Ionosphere layer is surrounded by two belts.

- a. ionic b. electric c. heat d. magnetic

44. The replaces the wood material , part by part of an old tree.

- a. plastic b. iron c. silica d. copper

45. is an example of microfossils.

- a. Mammoth b. Fern c. Foraminifera d. Coral

46. The air in troposphere layer moves

- a. horizontally. b. vertically. c. inclined. d. no right answer.

47. Which of the following elements is located in the third period ?

- a. ${}_{19}\text{K}$ b. ${}_6\text{C}$ c. ${}_3\text{Li}$ d. ${}_{15}\text{P}$

48. Bilharzia is due to the pollution of water.

- a. biological b. thermal c. chemical

49. The atomic radius is measured in

- a. nanometre. b. picometre. c. kilometre.

50. A fossil that plays an important role in petroleum exploration is

- a. morgan . b. nummulites. c. foraminifera.

51. Ice crystals have shape.

- a. tetragonal b. pentagonal c. hexagonal

52. The element, whose atomic number is (15) is similar in its chemical properties as the element whose atomic number is

- a. 5 b. 7 c. 17 d. 19

53. Meteors are formed in

- a. thermosphere. b. mesosphere. c. stratosphere. d. troposphere.

54. Microfossils like

- a. mammoth. b. ferns. c. foraminifera. d. archaeopteryx.

55. protectorate is a natural protectorate in USA where grey bear is protected.

- a. Ras Mohamed b. Wadi El-Raiyan c. Bluestone d. Panda

56. Ozone layer prevents (100 %) of ultraviolet rays from passing to the Earth.

- a. near b. medium c. far d. (a) and (b) together

57. From the complete body fossils is

- a. mammoth. b. nummulites. c. fish.

58. The number of elements in the Earth's crust equals

- a. 118 b. 92 c. 120

59. is/are used in extinguishing fires.

- a. Methyl bromide b. Halons c. Nitrogen oxides d. UV radiation

60. The second layer of atmosphere is called

- a. mesosphere. b. troposphere. c. stratosphere. d. thermosphere.

61. The transition elements start to appear from the beginning of the period.

- a. second b. third c. fourth d. fifth

62. All of the following are from endangered species except

- a. papyrus plant. b. bald eagle. c. quagga. d. rhinoceros.

63. p-block contains groups.

- a. 10 b. 2 c. 6 d. 8

64. The inert gas that has the same electronic structure as (Na⁺) is

- a. 10Ne b. 2He c. 18Ar d. 17Cl

65. The modern periodic table contains elements.

- a. 26 b. 92 c. 100 d. 118

66. Which of the following is an acidic oxide ?

- a. CO₂ b. MgO c. Na₂O d. FeO

67. Which of the following is a radioactive element which is used in food preservation ?

- a. Liquid sodium. b. Liquefied nitrogen.
c. Cobalt 60. d. Water.

68. Water has high boiling point due to the presence of bonds between its molecules.

- a. hydrogen b. ionic c. covalent d. metallic

69. added group zero in his table for noble gases.

- a. Mendeleev b. Moseley c. Rutherford d. Einstein

70. Which of the following is the halogen that exists in a solid state ?

- a. Fluorine. b. Chlorine. c. Bromine. d. Iodine.

71. When putting a glass bottle completely filled with water in the freezer, it breaks because when water freezes its increases.

- a. temperature b. density c. volume d. acidity

72. Which of the following elements don't react with water ?

- a. K and Na b. Ca and Mg c. Zn and Fe d. Cu and Ag

73. What is the volume of hydrogen gas evolved from electrolysis of acidified water if you know that the volume of oxygen gas evolved is 2 cm^3 ?

- a. 1 cm^3 . b. 2 cm^3 . c. 4 cm^3 . d. 6 cm^3

74. From the extinct species is

- a. dodo bird. b. lion. c. panda.

75. The device that is used for determining the elevation from sea level is

- a. aneroid . b. altimeter. c. thermometer.

76. The atmospheric pressure on the top of a mountain is the atmospheric pressure at the sea level.

- a. more than b. less than c. equal to

77. Luminous meteors are formed in layer.

- a. ionosphere b. stratosphere c. exosphere d. mesosphere

78. The transitional elements start to appear from period

- a. 2 b. 3 c. 4 d. 5

79. An example of microfossils is

- a. mammoth. b. ferns . c. radiolaria. d. archaeopteryx.

80. When sodium reacts with water gas evolves.

- a. N_2 b. O_2 c. H_2

81. is considered from halogens.

- a. Sodium b. Chlorine c. Helium

82. Aluminum oxide from oxides.

- a. amphoteric b. acidic c. nonmetallic d. basic

83. Sodium oxide from oxides.

- a. amphoteric b. acidic c. basic

84. Each period in the modern periodic table starts with (a/an) element.

- a. metallic b. inert c. nonmetallic

85. The elements of group (1A) are known as

- a. alkali metals. b. halogens. c. alkaline Earth metals.

Model Answer***(1) Choose the right answer:**

1. C
2. C
3. A
4. A
5. B
6. B
7. A
8. C
9. B
10. C
11. C
12. A
13. B
14. A

15. C
16. B
17. B
18. B
19. B
20. B
21. D
22. A
23. A
24. C
25. B
26. C
27. B
28. C
29. A
30. B
31. B
32. A
33. B
34. A

35. A
36. B
37. B
38. B
39. C
40. A
41. C
42. A
43. A
44. C
45. C
46. B
47. D
48. A
49. B
50. C
51. C
52. B
53. B
54. C

55. A
56. C
57. A
58. B
59. B
60. C
61. C
62. C
63. C
64. A
65. D
66. A
67. C
68. A
69. B
70. D
71. C
72. D
73. C
74. A

75. B
76. B
77. D
78. C
79. C
80. C
81. B
82. D
83. C
84. A
85. A

FINAL REVISION SHEET

1- Equations:

The Reactions of:

- 1) $\text{Mg} + 2\text{HCl} \xrightarrow{\text{dil}} \text{MgCl}_2 + \text{H}_2\uparrow$ (Magnesium & Hydrochloric acid)
- 2) $\text{Cu} + \text{HCl} \xrightarrow{\text{dil}} \text{NO Reaction}$ (Copper & diluted Hydrochloric acid)
- 3) $2\text{Mg} + \text{O}_2 \xrightarrow{\Delta} 2\text{MgO}$ (Magnesium (Metal) & Oxygen)
- 4) $\text{MgO} + \text{H}_2\text{O} \rightarrow \text{Mg(OH)}_2$ (Magnesium oxide & Water)
- 5) $\text{C} + \text{O}_2 \xrightarrow{\Delta} \text{CO}_2\uparrow$ (Carbon (Non-Metal) & Oxygen)
- 6) $\text{CO}_2 + \text{H}_2\text{O} \rightarrow \text{H}_2\text{CO}_3$ (Carbon dioxide & Water)
- 7) $2\text{Na} + 2\text{H}_2\text{O} \rightarrow 2\text{NaOH} + \text{H}_2\uparrow$ (Sodium & Water)
- 8) $2\text{K} + 2\text{H}_2\text{O} \rightarrow 2\text{KOH} + \text{H}_2\uparrow$ (Potassium & Water)
- 9) $\text{Mg} + 2\text{H}_2\text{O} \rightarrow \text{Mg(OH)}_2 + \text{H}_2\uparrow$ (Magnesium & Water)
- 11) $2\text{K} + \text{Br}_2 \rightarrow 2\text{KBr}$ (Potassium & Bromine)
- 12) $\text{Cl}_2 + 2\text{NaBr} \rightarrow 2\text{NaCl} + \text{Br}_2$ (Chlorine & Sodium bromine)
- 13) $\text{Br}_2 + 2\text{KI} \rightarrow 2\text{KBr} + \text{I}_2$ (Bromine & Potassium iodine)
- 14) $\text{Cl}_2 + 2\text{KF} \rightarrow \text{NO Reaction.}$ (Chlorine & Potassium fluoride)

2- Structure of water:

Water molecule is formed by combination between one oxygen atom & two hydrogen atoms by two single covalent bonds, the angle between them is 104.5° & its molecules linked together by hydrogen bond.

3- Properties of water:

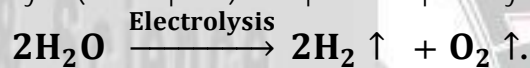
1)) Physical properties of water:

- 1) Water exists in three states: Solid, Liquid & Gas in ordinary temperature.
- 2) Water is a good polar solvent: can dissolve most ionic compounds like table salt & some covalent compounds like sugar but can't dissolve another like oil.

- 3) Water has high boiling point & low freezing point: its boiling point 100°C & freezing point 0°C .
- 4) Water density decreases on freezing: when temperature of it reaches to 4°C water molecules collected by hydrogen bonds forming ice crystals have hexagonal shape. Become large volume, low density & float that keep the life of marine creature.
- 5) Water has high latent point: bec. Hydrogen bond between its molecules. so, resist changing from one state to another. So, used in extinguishes (put off) fires.
- 6) Water has high specific point: it keeps the temperature of human body from change with changing the atmospheric temperature.

2)) Chemical properties of water:

- 1) Weakness of water ionization: it ionizes to (OH^-) & (H^+) ions.
- 2) Water has a neutral effect: it neutral effect on litmus paper (red & blue). bec. it ionizes to (OH^-) & (H^+) .
- 3) Resistance of water to decomposition: it doesn't analyze (decompose). except decompose by electricity way (Electrolysis), by Hofmann's Voltammeter.



4-Problems of atmospheric pressure:

- 1) Temp. At top = temp. At down - (height \times 6.5)
- 2) Temp. At down = temp. At top + (height \times 6.5)
- 3) Height =
$$\frac{\text{temp.at down} - \text{temp.at top}}{6.5}$$

- 1- Find the temperature at a point of height 10000 meters above sea level if the temperature at sea level is 24°C .
- 2- Find the temperature at a point of height 2000 meters above sea level if the temperature at sea level is 23°C .
- 3- If the temperature at sea level is 24.5°C , find the temperature at the top of troposphere layer if its thickness is 13 kilometers.
- 4- Calculate the height of a mountain if the temperature at its base is 30°C and at its top is (-9°C) .

5-Location of elements in Modern periodic table:

- 1) Group number = number of electrons in outer most energy level.
- 2) Period number = number of energy levels.

#Ex.: $^{23}_{11}\text{Na}$

6-Give Reasons

1 -Many attempts are made by scientists for classification of elements.

To be easily studied and to find the relation between elements and their physical and chemical properties.

2 - Failure of Mendeleev's periodic table (Appearance of Mosley's periodic table).

Because there were some disadvantages such as:

A- Make disturbance in the ascending order of atomic weights for some elements.

B- Dealing with isotopes of one element as different elements.

3 -Mosley arranged the elements according to their atomic number not their atomic weight.

Because he found that the periodicity of the elements properties is related to their atomic numbers not their atomic weight.

4 -Element ($_{11}\text{Na}$) lies in the first group, while element ($_{13}\text{Al}$) lies in the third group.

Because the no. of electrons in the outer most shell for (Na) = 1

And the no. of electrons in the outer most shell for (Al) = 3

5 - Knowing the atomic number for the element allowing determining its location in the periodic table.

Because number of energy levels indicates the period, while number of outer most electrons indicates the group.

6 - The atomic size decreases in the period by the increase of the atomic number.

Due the increase of the attraction force between positive nucleus and the electrons in the outermost energy level.

7 -The atomic size increases in the same group by the increase of their atomic numbers.

Due to the increase in the number of energy levels in the atom.

8 - Advantages and disadvantages for Mendeleev periodic table.

Advantages	disadvantages
1-left spaces (empty cells) in his table, 2- correction the wrong estimated atomic weights of some elements	1-make a disturbance in the ascending order of atomic weights for some elements, due to putting them in groups which suit their properties, 2- Dealing with the isotopes of one element as different elements because they are different in their atomic weights.

9 -water and ammonia are polar compounds.

Because the electronegativity difference between their elements is relatively high.

10 -the kind of the covalent bond in oxygen and chlorine molecules equals zero.

Because the electronegativity difference between the 2 joined atoms equals zero.

11 -it is difficult to identify semimetals by knowing their electronic configuration.

Due to the difference of numbers of the electrons in their valence shells.

12 -Metallic property of the same group increases by the increase of the atomic number as we go from up to down.

Due to the increase of the atomic size.

13 -Non-metallic property decreases in the group as in (7A).

Due to the decrease of electronegativity values.

14 -The high blood pressure patients are recommended to decrease using table salt in foods.

Because high concentration of sodium ions in the body causes high blood pressure.

15 -the metals of group (1A) are called alkali metals.

Because they react with water forming alkali solutions.

16 -Although Hydrogen gas exists in group (1A) it is a non-metal.

Because its atom is remarkably small and it is a gaseous element.



17 - Some of alkali metals are kept under kerosene or paraffin.

To prevent their reaction with moist air.

18 - Lithium is kept under Paraffin not kerosene.

Because it floats on the surface of kerosene and it is immediately burns.

19 -water which used in the cooling of the nuclear reactors destroys the marine organisms found in it.

Due to the separation of the dissolved oxygen in it.

20 - Alkali metals are monovalent elements.

Because they contains one electron in the outer most energy level.

21 -Earth alkaline metals are divalent elements.

Because they contains two electrons in the outer most energy level.

22 -Eating apricot and cauli-flower prevent infection by heart diseases.

Because they are rich in magnesium (Mg).

23 -the chemical activity of group 2A elements increases by the increase of the atomic size.

Because the loss of valency electrons become easier.

24 -elements of group (17) are called Halogens.

Because they react with metals forming salts.



25 -Chlorine is used in the manufacture of correction substances.

Because it is a very volatile liquid.

26 -elements of group (17) are monovalent elements.

Because they gain one electron during the chemical reactions

27 -elements of group 17 don't exist individually.

Because they are chemically active.

28 -Sodium is used in its liquid state as it is a good conductor of heat.

Because it is used in the transferring heat from inside the nuclear reactor to outside.

29 -Silicon slides are used in the manufactures of computers .

Because they are semiconductors which their conductivity of electricity depends on the temperature.

30 -Liquified Nitrogen is used in the preservation of cornea.

Because it has a very low boiling point (-196°C).

31 -the radioactive cobalt is used in food preservation.

Because gamma rays which comes out from it prevent the reproduction of microbial cells.

32 -A weak electrostatic attraction originated between water molecules which are called hydrogen bonds.

Due to the large electronegativity of oxygen compared with hydrogen.

33 -the abnormality of water properties.

Because of the presence of hydrogen bonds between its molecules.

34 -water is a unique substance.

Because its existence in the three states at the ordinary temperature.

35 -Rising of the boiling point of water.

Due to the presence of hydrogen bonds.

36 -the density of water when it is in solid state is lower than when it is a liquid state.

Because when it is in the temperature lower than 4°C , the water molecules are collected by hydrogen bonds forming hexagonal crystals with many spaces between them.

37 -Swimming in the sea is easier than swimming in the pole.

Because the density of salty water is higher than density of the fresh water.

38 -rising of the latent heat of water makes water one of the most important liquid in fire extinguisher.

Because it consumes a large amount of heat of combustion during its vaporization process.

39 -the temperature of the human body doesn't change by the changing of the temperature.

Because of the high specific heat of water.

40 -water is neutral liquid.

Because when it is ionizes it gives equal numbers of positive hydrogen ions and negative hydroxide ions. ($\text{H}^{+} = \text{OH}^{-}$).

41 -Mixing human and animal wastes of water cause many diseases.

Because it cause the biological pollution which makes (Bilharzia – typhoid – hepatitis)

42 -Importance of aneroid barometer.

To estimate the day weather and atmospheric barometer.

43 -troposphere is called disturbed layer.

Because most of the weather changes takes place in it.

44 -All atmospheric phenomena like rains, winds and clouds takes place in troposphere.

Because it contains about 75% of the atmosphere mass.

45 -earth's atmosphere is organized by the 1st atmospheric layer (troposphere).

Because it contains about 99%of the atmospheric water vapour.

46 -At the lower part of the stratosphere, the temperature measures (-60°C), then increases gradually until it reaches 0°C at the end of the layer.

Due to the absorption of ultraviolet radiation (emitted from The Sun) by the ozone layer that is present in the upper part of the layer.

47 -The lower part of stratosphere is suitable for flying planes.

Because it doesn't contain clouds or suffer from any weather disturbances and the air moves in this part horizontally.

48 -Although meteors burn in the mesosphere, spaceships don't burn during passing through it.

As they have a conical front that disperses heat and tails made of an insulated material.

49 - Mesosphere layer is much vacuumed.

As it contains only a limited amount of helium and hydrogen gases.

50 - Meteors burn in mesosphere layer.

Due to friction with air molecules.

51 - Thermosphere means the heated layer.

As it is the hottest layer of the atmosphere.

52 - Ionosphere plays an important role in wireless communication and broadcasting.

As it reflects radio waves that are transmitted by communication centers and radio stations.

53 - Ionosphere is surrounded by two magnetic belts known as Van Allen Belts.

Because these two belts play an important role in dispersing harmful charged cosmic radiation away from the Earth.

54 - Ozone layer is formed in the stratosphere.

Because it contains a suitable amount of oxygen gas.

55 -Importants of ozone layer (Ozone is said to act as a protective shield for living organisms).

Because it does not allow penetration of all far and medium ultraviolet radiations, which have very harmful effects.

56 -Ultraviolet radiations, of wavelength close to the visible light penetrate the atmosphere and reach the earth's surface.

Where it helps in producing Vitamin D in the bodies of the newly born babies.

57 -Ozone Hole increases in September each year.

Because all pollutants are assemble as black clouds that are pushed by the wind towards South Pole.

58 -Use of chlorofluorocarbon compounds must be reduced.

Because they erode the ozone layer.

59 -stop producing the ultrasound concord planes.

Because their exhausts affects the ozone

60 -the temperature of the planet earth has been increased.

Due to the greenhouse gases in the atmosphere.

61 -Greenhouse gases are considered a blessing which can be changed into a catastrophe.

Because without those gases would have decreased to -18°C and the increases in the amount of them may lead to a disaster.

62 -Altimeter is used in airplanes.

To determine the elevation of navigation based on the atmospheric pressure.

63 -the difference between cast and mold fossils.

Cast: gives the internal details of the living.

Mold: Gives the outer details of the living.

64 -Variety of fossils types.

Because the presence of four types of the fossils:

1-Cast 2- Mold 3-Complete body 4-petrified fossils.

65 -the importance of the index fossil.

It indicates the age of sedimentary rocks.

7-Definations

1- Electronegativity: The ability of the atom in covalent molecule to attract the electrons of the bond towards itself.

2- Polar compound: They are covalent compounds in which the difference in electronegativity between elements forming their molecules is relatively high.

3- Pure covalent bond: The difference in electronegativity between elements of covalent compound molecule equal zero. ex, $[(\text{H}_2) - (\text{O}_2)]$

4- Chemical activity series: series in which metals are arranged in a descending order according to their chemical activity.

5- Hydrogen bond: Weak electrostatic attraction force that arises between the molecules of polar compounds.

6- Latent heat of fusion: The amount of heat energy needed to change 1 kg of ice from solid state to liquid state without changing its temperature.

- 7- Latent heat of vaporization: The amount of heat energy needed to change 1 kg of water from liquid state to the vapor state without changing its temperature.
- 8- Specific heat: Amount of heat energy needed to raise the temperature of 1 kg of a substance by 1° C.
- 9- Ionization: Process of converting the molecules of some covalent compound into ions.
- 10- Hofmann's voltammeter: An apparatus used for the electrolysis of acidified water.
- 11- Water pollution: The addition of any substance to the water which causes continuous gradual change in water properties and affecting the health and the life of living creatures.
- 12- Metalloids [Semi – metallic elements]: They are elements which have the properties of both metals and non metals.
- 13- Atmospheric envelope of earth: It is gaseous envelope rotating with the Earth around its axis and it extends about 1000 km above sea level.
- 14- Atmospheric pressure: The weight of air column of an atmosphere height on a unit area (1 cm² or 1 m²)
- 15- Normal atmospheric pressure: The atmospheric pressure at sea level and it equals 1013.25 mb.
- 16- Isobar: curved lines that join the points of equal pressure in atmospheric pressure maps.
- 17- Tropopause: The region between troposphere and stratosphere.
- 18- Stratopause: The region between stratosphere and mesosphere.
- 19- Mesopause: The region between mesosphere and thermosphere.
- 20- Ionosphere layer: The layer that contains charged ions and it has an important role in wireless communications.
- 21- Van Allen belts: They are two magnetic belts surrounding ionosphere and play an important role in scattering of harmful charged cosmic radiations.
- 22- Aurora phenomenon: A phenomenon that appears as brightly coloured light curtains seen from the both poles (North and south) of the Earth.
- 23- Exosphere: Region in which the atmospheric envelope is inserted with outer space.
- 24- Erosion of ozone layer: Losing parts of ozone layer (become thin).
- 25- Global warming phenomenon: Continuous increase in the average temperature of the earth near surface air.
- 26- Green house effect: Trapping of infrared radiation in the troposphere layer due to increase of ratio of greenhouse gases which cause the increase of planet Earth temperature.
- 27- Fossils: They are traces and remains of the old living organisms that are preserved in sedimentary rocks.
- 28- Trace: They are traces indicate the activity of once an old living organisms during its life.

29- Remains: They are parts indicate the remains of once old living organisms after death.

30- Amber: The resinous mater is secreted from pine trees and had been solidified and preserved the bodies of organisms from decaying.

31- Second type: Solid cast: It is replica of the internal details of a skeleton of once an old living organism.

32- Third type: Mold: It is replica of the external details of a skeleton of once an old living organism.

33- Petrified fossils: They are fossils in which minerals replace the organic matter for organism part by part leaving the shape without any change.

34- Petrified woods: They are fossils which are formed as a result of replacing the organic matter of wood by silica part by part and they give us details about the life of once an old plant.

35- Petrification: It is the process of replacing wood material of trees by silica to form petrified woods part by par.

36- Index fossils: They are fossils of the organisms that lived a short period of time in the past and had a wide geological distribution and became extinct.

37- Fossil record: The fossils that exist in the rocks of different areas that indicate the extinction and evolution of organisms.

38- Extinction: It the continuous decrease without compensation in the number of a certain species of living organisms until all members dies out.

39- The moment of extinction: It is the date of death of last individual of that species.

40- IUCN: The International Union for Conservation of Nature, was established to protect the endangered species.

41- A RED LIST: It is a list of endangered species and the level of danger of each species.

42- The simple ecosystem: It is ecosystem that has a few members and it is severely affected by the absence of one type of species of organisms.

43- The complicated ecosystem: It is ecosystem that has multiple members and it is not affected much by the absence of a species of the living organisms.

44- Food Cain: It is the path of energy that transmits from a living organism to another in the ecosystem.

45- Natural protectorates: They are safe areas established to protect endangered species in their homeland.

The most recognized protectorates in the world are.

8- What Is The Function Of The Following?

- 1- Bohr:
- 2-Mendeleev:
- 3-Moseley:
- 4-Modern Periodic Table:
- 5-Liquified Sodium:
- 6-Cobalt 60:
- 7-Silicon:
- 8-Plant Coal (Charcoal):
- 9-Chlorine:
- 10-Hydrogen Bond:
- 11-Low Density during Water Freezing:
- 12-High Latent Heat of Water:
- 13-High Specific Heat of Water:
- 14-Hofmann S Voltmeter:
- 15-Troposphere:
- 16-Stratosphere:
- 17-Mesosphere:
- 18-Thermosphere:
- 19-Ionosphere:
- 20-Exosphere:
- 21-Satellite:
- 22-Van-Allen Belts:
- 23-Ozone Layer:
- 24-Dobson Unit:

25-Barometer Instrument:

26-Aneroid Device:

27-Map of Atmospheric Pressure:

28-Altimeter Set:

29-Freon (Chlorofluorocarbon) (CFC):

30-Halons:

31-Methyl Bromide Gas:

32-Montreal Protocol:

33-Kyoto Protocol:

34-Fossils:

35-Coral Fossils:

36-Nummulite Fossils:

37-Ferns Fossils:

38-Snow & Amber:

39-Natural Protectorate:

40-Horns of Rhinoceros:

41-Bluestone Protectorate:

42-Panda Protectorate:

43-Ras Mohamed Protectorate:

44-Wadi-Hetan Protectorate:

45-(IUCN) Society:

46-Micro-Fossils:

47-Food Chain:

48-Electronegativity:

49-Plankton:

50-Bicometer:

1) Complete the following:

1. Elements of group (1A) are called, while elements of group (7A) are called
2. Elements that locate in the middle of the periodic table are called and they start to appear from the period number
3. Each period in the modern periodic table starts with and ends with
4. By increasing the atomic number, the value of metallic property in the groups of the periodic table.
5. Fluorine and chlorine exist instate, while iodine exists in state.
6. Mendeleev arranged the elements according to, while Moseley arranged the elements according to
7. From advantages of Mendeleev's table are and
8. The scientist discovered the main energy levels around the nucleus, while the scientist discovered the positive protons inside the nucleus.
9. The modern periodic table consists of horizontal periods and vertical groups.
10. The type of bond in the water molecule is, while the bond between water molecules is
11. When the temperature of water becomes less than 4°C , its volume, while its density
12. Sodium is kept under the surface of so, as not to react with
13. and are metals which don't react with water.
14. Elements of s-block are located on the of the periodic table and they are arranged in groups.
15. Dissolving basic oxides in water produces, while dissolving acidic oxides in water produces
16. The period number represents, while the group number represents
17. The strongest metal is and lies in group
18. The strongest non-metal is and lies in group
19. The atmospheric pressure is the of air column and is measured in unit.
20. As we go up to the top of the mountain, the atmospheric pressure
21. The atmosphere consists of 4 layers which are,, and

22. The region between the first layer and second layer is called
23. The temperature of troposphere as going up until it reaches
24. The air in the troposphere moves, while in the it moves horizontally.
25. Troposphere layer contains about of the mass of the atmospheric air and about of atmospheric water vapor.
26. layer is found in the upper part of stratosphere which absorbs rays emitted from the sun.
27. Most of the weather features occur in the
28. Ionosphere is important in and is surrounded by two magnetic belts known as
29. The atmospheric pressure at sea level equals mb.
30. are used in measuring the atmospheric pressure.
31. is the region between mesosphere and thermosphere.
32. Ozone layer is found in layer, while meteors are burnt in layer.
33. the thickness of stratosphere is, while that of mesosphere is
34. is the coldest layer in the atmosphere, while is the hottest layer.
35. The ozone layer is found in the layer at a height of above the sea level.
36. The breaks the bond in the oxygen molecules to give
37. The scientist postulated that the thickness of the ozone layer is only
38. The pollutants of the ozone layer are, and
39. result from burning the fuel of the concord airplanes.
40. The ozone hole is found at the pole and increases every in each year.
41. The most important greenhouse gases are,, and
42. The ultraviolet rays are three kinds which are, and
43. The ozone layer doesn't allow the penetration of all ultraviolet rays.
44. are used in extinguishing fires and is used as coolant in cooling devices
45. UV rays have effect, while infrared rays have effect.
46. Archaeopteryx represents the link between and
47. Fossils are used in exploration and determination of the age of

48. is an example of microfossils.
49. and are examples of fossils of complete bodies.
50. is an example of cast fossils while and are examples of the petrified fossils.
51. were the first vertebrates that appeared which are followed by
52. and are from examples of mold fossils.
53. Radiolarian fossil is an example of, but amber fossil is an example of
54. indicate the extinction of species of living organisms.
55. and are from the factors of mass extinction.
56., and are from the factors of recent extinction.
57. destroys the forests trees, while chemical insecticides break down
58., and from the natural disasters that threaten living organisms.
59. and are endangered birds, while and are endangered mammals.
60. is an example of endangered plants in Egypt which is used by pharaohs in manufacturing
61. Dodo bird is bird, while bald eagle is bird.
62. plant is the food of panda bear and it doesn't blossom except once every.....
63. are safe areas established to protect the living organism from extinction.
64. and are examples of extinct animals.
65. protectorate in USA, where is protected.

2) Write the scientific term for the following:

1. A table in which the elements are arranged according to their atomic weights. (.....)
2. A table in which the elements are arranged according to their atomic numbers and the way of filling the energy sublevels with electrons. (.....)
3. Elements where their valency shell contains more than 4 electrons. (.....)
4. The block that contains the series of lanthanides and actinides. (.....)
5. The ability of the atom in a covalent molecule to attract electrons of the chemical bond toward itself. (.....)

6. The kind of bond which binds oxygen atom with hydrogen atom in water molecule. (.....)
7. Descending arrangement of metals according to their chemical activity. (.....)
8. They are symbolized by letters s, p, d and f. (.....)
9. The measuring unit of the atomic size of an element. (.....)
10. A good polar solvent for most of ionic compounds and some of covalent compounds. (.....)
11. Adding any substance to the water which changes its properties, affects the health and life of living organisms. (.....)
12. The change in water properties by adding any substance. (.....)
13. The apparatus which is used for water electrolysis. (.....)
14. Elements have properties of metals and non-metals. (.....)
15. A kind of water pollution, which causes many diseases as typhoid. (.....)
16. A type of water pollution originated from discharging of factories wastes and sewage in canals, rivers and seas. (.....)
17. It is a weak electrostatic attraction force that arises between the molecules of polar compounds. (.....)
18. Weight of air column of an atmospheric height on unit area. (.....)
19. The gaseous envelope that surrounds the earth and rotates around its axis. (.....)
20. A phenomenon that appears as brightly colored light curtains at both poles of the earth. (.....)
21. Two magnetic belts surrounding ionosphere and play an important role in scattering harmful charged cosmic radiation. (.....)
22. An instrument used by pilots to know the elevation from the sea level. (.....)
23. The curved lines that join the points of equal atmospheric pressure. (.....)
24. An atmosphere layer in which the air moves vertically. (.....)
25. The hottest layer in the atmosphere. (.....)
26. The region in which the atmosphere is inserted with outer space. (.....)
27. The region between stratosphere and mesosphere at which the temperature remains constant. (.....)
28. An insecticide used for the preservation of crops. (.....)

29. A molecule is formed combining an atom of an element to a molecule of the same element.
(.....)
30. A phenomenon that occurs due to the increase in the percentage of CO₂ gas and leads to an increase in the planet Earth's temperature. (.....)
31. A unit that measures the degree of ozone. (.....)
32. Compounds that are known commercially as Freon. (.....)
33. The region in which satellites orbit around the earth planet. (.....)
34. A molecule produced from the union of an oxygen atom and its molecules. (.....)
35. A layer which plays an important role in wireless communication. (.....)
36. A charged layer which reflects radio waves. (.....)
37. A type of UV radiation that is absorbed completely (100 %) by the ozone layer. (.....)
38. It indicates the activity of the old living organism during its life. (.....)
39. Parts that indicate the remains of the living organism after death. (.....)
40. Traces and remains of old living organism which are preserved in sedimentary rock.
(.....)
41. It is solidified resinous matter which was secreted by pine trees in the old geographical ages.
(.....)
42. It is the replica of the internal details of a skeleton of an old living organism. (.....)
43. It is the replica of the external details of a skeleton of an old living organism. (.....)
44. They are fossils in which minerals replace the organic matter for organism part leaving the shape without any change. (.....)
45. The process of replacing the wood material of trees by silica to form petrified wood part by part.
(.....)
46. They are fossils of organisms that had lived for short time in the past and a wide geographical distribution then became extinct. (.....)
47. The fossils that are found in the limestone rocks of Mokattam mountain which indicates it was a sea floor since more than 35 million years ago. (.....)
48. Fossils links between reptiles and birds. (.....)
49. Fossils used in the determination of the age of sedimentary rocks. (.....)
50. The continuous decrease in the number of the same species of a living organism. (.....)

51. Excessive hunting of the wild animals to get their furs and skins. (.....)
52. A bird that became endangered because it feed on fish that contain poison in their bodies.
(.....)
53. It is the path of energy that transfers from a living organism to another. (.....)
54. An ecosystem that has a few number and it is severely affected by the absence of one of its species. (.....)
55. Safe places that are specified to protect the endangered species in their homeland. (.....)
56. The first protectorate that has been established in Egypt and it is characterized by rare coral reefs and colored fish. (.....)
57. An aquatic plant used by pharaohs to manufacture writing papers. (.....)

3) Mention one use of:

1. Hoffmann's voltameter:
2. Cobalt 60:
3. Liquefied nitrogen:
4. Liquid sodium:
5. Silicon slides:
6. Methyl bromide gas:
7. Halons:
8. Freon:
9. Aneroid:
10. Altimeter:
11. Fossils:
12. Fern fossil:
13. Coral fossil:
14. Nummulite fossil:
15. Radiolarian fossil:

4) Mention one example for:

1. Halogen exists in a liquid state.
2. The strongest metallic element.
3. A metalloid element.

4. Amphoteric oxide.
5. Covalent compound cannot dissolve in water.
6. A greenhouse gas.
7. Trace fossil.
8. A mold fossil.
9. A cast fossil.
10. Petrified fossil.
11. Microfossils which is considered a guide for existence of petroleum.
12. Fossil of a complete body.
13. An extinct bird recently.
14. An endangered bird.
15. An endangered mammal.
16. An endangered plant.
17. Fossils are found in El-Mokattam mountain.

5) Give reason for each of the following:

1. The atomic size decreases in periods by increasing the atomic number?
2. Liquefied nitrogen is used in preservation of cornea of the eye?
3. Cobalt 60 is used in food preservation?
4. Silicon slides are used in making electronics as computers?
5. Don't store tap water in empty plastic bottles of mineral water?
6. Water and ammonia are from polar compounds?
7. Water density decreases on freezing?
8. Sugar dissolves in water?
9. Although water of oceans freezes at polar zones, the aquatic creatures are still alive?
10. Cesium is the strongest metallic element?
11. The atomic size of (${}_3\text{Li}$) is greater than that of (${}_4\text{Be}$)?
12. Elements of the same group have the same properties?
13. Pure water doesn't affect litmus paper?
14. Adding drops of dilute acid to water during its electrolysis?
15. Water has high boiling point and freezing point?

16. Bromine cannot replace chlorine in sodium chloride?
17. Reaction of potassium with water is stronger than that of sodium with water?
18. The ozone layer acts as a protective shield for living organisms?
19. The atmosphere pressure decreases by increasing the height above the sea level?
20. All weather conditions take place in the troposphere layer?
21. Pilots prefer to fly their planes at the lower part of stratosphere layer?
22. Stopping producing concord aeroplanes?
23. The temperature increases gradually in the stratosphere layer?
24. Mesosphere is the coldest layer?
25. Mesosphere is highly rarefied (vacuumed)?
26. Ionosphere is important for radio stations?
27. Occurrence of aurora phenomenon?
28. The ozone layer is formed in the stratosphere layer?
29. We should not overuse halons and CFC compounds?
30. The greenhouse gases have a bad effect on the earth?
31. Global warming phenomenon has negative effects?
32. The phenomenon, ozone hole, increases in September each year?
33. Governments put laws for regulating the process of hunting of some living organisms?
34. Dodo bird was an easy target for hunters?
35. The simple ecosystem is significantly affected by the absence of one of its species?
36. Amber is considered a suitable medium for formation of complete body fossils?
37. Mammoth fossil is preserved as a complete body fossil?

6) What happens when....?

1. Drinking water polluted with mercury?
2. Eating fish which contains high concentration of lead?
3. Storing water in plastic bottles of mineral water?
4. Putting a magnesium strip in a test tube containing oxygen?
5. Decrease in water temperature less than 4 °C?
6. Dissolving magnesium oxide in water then adding drops of litmus solution to it?

7. There is no difference in electronegativity between hydrogen atom and oxygen atom in water molecule?
8. Element loses an electron?
9. Ascending up in troposphere layer (concerning temperature and atmospheric pressure)?
10. Existence of ozone in conditions of standard temperature and pressure (STP)?
11. Overuse of Freon or increasing the use of CFCs on Earth?
12. Ozone layer disappeared?
13. Meteors move at very high velocity in mesosphere layer?
14. Dipping the old insects in amber?
15. Silica matter replaces wood material part by part of an old tree?
16. Mixing of animal and human wastes in water?

7) Locate the position of the following elements in the modern periodic table:

1. $^{20}_{10}\text{Ne}$
2. $^{40}_{20}\text{Ca}$
3. $^{32}_{16}\text{S}$
4. $^{14}_7\text{N}$

8) Compare between each of the following:

1. Mendeleev's periodic table and modern periodic table.
2. Halogens and alkali metals.
3. Basic oxides and acidic oxides.
4. Metals and non-metals
5. Remains and traces.
6. Mold and cast.
7. Simple ecosystem and complicated ecosystem.
8. Reasons of old extinction and recent extinction.

9) What is meant by:

1. Chemical activity series.
2. Polar compounds.
3. Metalloids.
4. Atmospheric pressure

5. Aurora phenomenon
6. Exosphere region
7. Ionosphere
8. Isobar
9. Mesopause
10. Van-Allen belts
11. Greenhouse gases
12. Greenhouse effect
13. Ozone hole
14. Global warming
15. Fossils
16. Extinction
17. Natural protectorate

10) Mention the name of the scientist who discovered:

1. Protons inside nucleus.
2. Added zero group to the periodic table.
3. Main energy levels.
4. Normal degree of ozone.

11) Complete the following chemical equations:

1. $\text{Na} + \text{H}_2\text{O} \rightarrow \dots + \dots$
2. $2\text{NaBr} + \text{Cl}_2 \rightarrow \dots + \dots$
3. $\text{Mg} + 2\text{HCl} \rightarrow \dots + \dots$
4. $\text{Cu} + 2\text{HCl} \rightarrow \dots + \dots$
5. $\text{Zn} + 2\text{HCl} \rightarrow \dots + \dots$
6. $\dots + \dots \rightarrow 2\text{KBr}$
7. $\text{MgO} + \text{H}_2\text{O} \rightarrow \dots$
8. $\text{SO}_2 + \text{H}_2\text{O} \rightarrow \dots$

12) Write the balanced chemical equations:

1. Burning a piece of coal in air.
2. Carbon dioxide with water

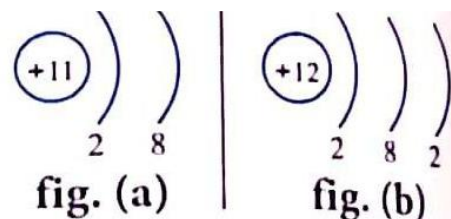
- Sodium bromide with chlorine
- Potassium iodide with bromine.
- Reaction of sodium with water.
- Magnesium with dilute hydrochloric acid.
- The formation of ozone by the effect of ultraviolet radiation.
- Decomposition of acidified water by electricity (electrolysis of water).

13) Solve the following problems:

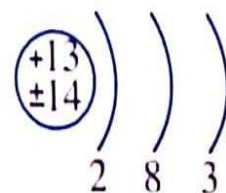
- Find the temperature** at a point of height 2000 meters above the sea level if the temperature at the sea level is 23 °C.
- Calculate the temperature at a base of a mountain, if its height is 6 km and the temperature at its top is 10 °C.
- Calculate the height of a mountain if the temperature at its base 25 °C and its top -14 °C
- Calculate the percentage of erosion of ozone layer in a certain area, knowing that ozone degree at this area is 255 Dobson.

14) Answer the following

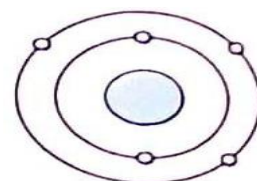
- Which figure represent a positive ion?
 - Which figure represents a neutral atom?
 - Determine the position of the atom in the periodic table



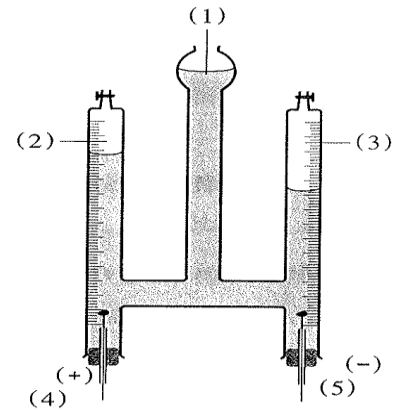
- Look at the opposite figure, then find the location of this element in the modern periodic table. Mention the block of this element.



- calculate the atomic number of the element follows it in the same period?
 - calculate the atomic number of the element follows it in the same group?



4. a) The name of this apparatus is
- b) The apparatus is used to
- c) Label the numbers (1), (2), (3), (4), and (5)?
- d) If the volume of the gas evolved at the negative pole is 40 cm³, the
Volume of the gas evolved at the positive pole is



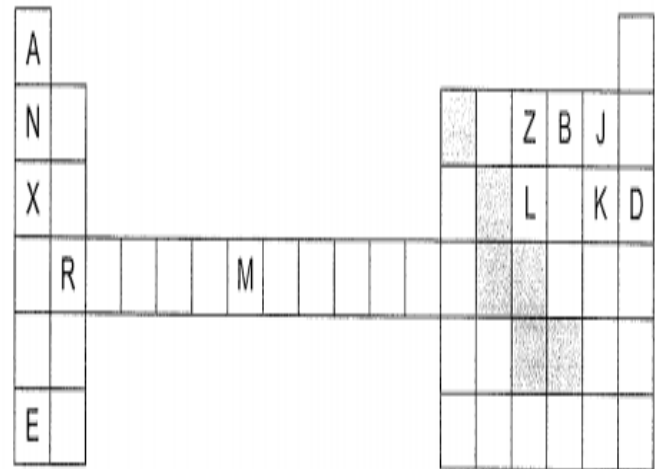
5. Arrange the following:

Fossils starting with first appearance on the life stage.

(Mold fossil of fish – Mammoth fossil – Trilobite fossil – Archaeopteryx)

6. Write the letter which represents:

- Transition elements (.....)
- The strongest metal (.....)
- The strongest nonmetal (.....)
- Noble gas (.....)
- The shaded part represents elements



7. Mention three ways to protect water from pollution.

8. Mention three ways to protect living organisms from extinction.

Model Answers

Complete the following:

1. Alkali metals - halogens
2. Transition elements - 4
3. Strong metal – strong non-metal
4. Increases
5. Gaseous – solid
6. Atomic weight – atomic number.
7. He left gaps – corrected Atomic Weight of some elements.
8. Bohr – Rutherford
9. 7 – 18
10. Covalent – hydrogen
11. Increases – decreases
12. Kerosene – air
13. Gold – copper
14. Left side – two
15. Alkalis – acids
16. Number of energy level – number of outermost electrons.
17. Cesium – 1A
18. Fluorine – 7A
19. Weight – bar or millibar
20. Decreases
21. Troposphere – stratosphere – mesosphere – thermosphere
22. Tropopause
23. Decreases – (- 60 °C)
24. Vertical – stratosphere
25. 75 % - 99 %
26. Ozone – harmful UV
27. Troposphere
28. Wireless communication centers – Van-Allen belts
29. 1013.25 millibar
30. Barometers
31. Mesopause
32. Stratosphere – mesosphere
33. 37 Km – 35 Km
34. Mesosphere – thermosphere
35. Stratosphere – 20 Km
36. UV – two free oxygen atoms.
37. Dobson – 3 mm
38. Chlorofluorocarbon compounds – halons – methyl bromide gas
39. Nitrogen oxide
40. South – September
41. Carbon dioxide – water vapor - Chlorofluorocarbon – nitrous oxide
42. Near UV – Medium UV – Far UV
43. Far
44. Halons - Chlorofluorocarbon compounds
45. Chemical – thermal
46. Reptiles – birds
47. Petroleum – sedimentary rocks
48. Foraminifera
49. Mammoth – amber
50. Ammonite – dinosaur eggs – dinosaur tooth
51. Fish – amphibians
52. Nummulite – trilobite
53. microfossils – complete body
54. Fossils
55. Meteorites impact with earth – long glacial age
56. Overhunting – environmental pollution – destroying natural habitats
57. Acidic rains – the food chain
58. Volcanoes – earthquakes – high marine tide
59. Ibis bird – bald eagle
60. Papyrus – writing papers
61. Extinct – endangered
62. Bamboo – 100 years
63. Natural protectorates
64. Dinosaurs – mammoth
65. Bluestone – grey bear

Write the scientific term for the following:

1. Mendeleev's periodic table
2. Modern periodic table
3. Non-metals
4. F-block
5. Electronegativity
6. Covalent bond
7. Chemical activity series
8. Energy sublevels
9. Picometer
10. Water
11. Water pollution
12. Water pollution
13. Hoffman's voltameter
14. Metalloids
15. Biological pollution
16. Chemical pollution
17. Hydrogen bond
18. Atmospheric pressure
19. Atmospheric envelope
20. Aurora phenomenon
21. Van – Allen belts
22. Altimeter
23. Isobar
24. Troposphere
25. Thermosphere
26. Exosphere
27. Stratopause
28. Methyl bromide gas
29. Ozone molecule
30. Global warming phenomenon
31. Dobson
32. Chlorofluorocarbons
33. Exosphere
34. Ozone molecule
35. Ionosphere
36. Ionosphere
37. Far UV rays
38. Trace fossils
39. Remain fossils
40. Fossils
41. Amber
42. Mold fossil
43. Cast fossil
44. Petrified fossils
45. Petrification
46. Index fossils
47. Nummulite fossils

48. Archaeopteryx fossils
49. Index fossils
50. Extinction
51. Overhunting

52. Bald eagle bird
53. Food chain
54. Simple ecosystem
55. Natural protectorate

56. Ras-Mohamed protectorate
57. Papyrus plant

Mention one use of:

1. Used for electrolysis of water into its elements.
2. Used in food preservation.
3. Used in preservation of the cornea of the eye.
4. Used for transferring heat from inside the nuclear reactor to outside.
5. Used in the manufacturer of electronic devices.
6. Used as an insecticide to preserve stored agriculture crops.
7. Used in extinguishing fires.
8. Used as a cooling substance in air conditioning sets.
9. Used to determine the possible day weather based on the atmospheric pressure.
10. Used in aeroplanes to measure the altitude of an object at a certain height based on the atmospheric pressure.
11. Fossils can show scientists: What kind of organisms lived in the past? How the environment has changed with time? How organisms have changed with time?
12. They indicate that the environment where they were hot & rainy tropical.
13. They indicate that the environment where they were clear warm shallow seas.
14. found in Mokattam Mountain and they indicate that this area was a sea floor more than 35 million years ago.
15. It is important in petroleum exploration.

Mention one example of:

- | | | |
|---------------------------------|---|-----------------------------|
| 1. Bromine | 8. Nummulite – trilobite | 13. Dodo bird |
| 2. Cesium | 9. Trilobite | 14. Bald eagle – ibis bird |
| 3. Silicon or Boron | 10. Petrified dinosaur tooth or petrified dinosaur eggs | 15. Panda bear – rhinoceros |
| 4. Aluminum oxide or zinc oxide | 11. Foraminifera – radiolarian | 16. Papyrus plant |
| 5. Oil | 12. Mammoth fossils – amber fossils | 17. Nummulite fossils |
| 6. Carbon dioxide | | |
| 7. Worm's tunnel fossil | | |

Give reason for each of the following:

1. Because by increasing the atomic number (in periods from left to right), the attraction force between the nucleus and the outermost electrons increases.
2. Due to the decrease in its boiling point (-196°C).
3. Because it emits gamma rays which prevent the reproduction of microbial cells without harm for the human.
4. Because it is a semi-conductor, its ability to conduct electricity depends on its temperature.
5. Because plastic reacts with chlorine gas (which is used as water disinfectant) leading to the increase in the infection rates by cancer.
6. Because the difference in electronegativity between the elements forming their molecules is relatively high.
7. Because when the temperature of water becomes less than 4°C , water molecules are collected together by hydrogen bonds forming hexagonal ice crystals with many spaces between them, so its volume increases and density decrease.
8. Because sugar molecules can make hydrogen bonds with water molecules.

9. Because when water freezes, its density decreases and float on the surface and this provides the creatures with the chance to be still alive.
10. Because it is the largest atomic size, so it can lose its valency electron easily.
11. Because by increasing the atomic number (in periods from left to right), the attraction force between the nucleus and the outermost electrons increases.
12. Because elements of the same group have the same number of electrons in the outermost energy level.
13. Because pure water is formed of equal numbers of (H⁺) (which gives the acidic property) and (OH⁻) (which gives the basic property).
14. Because pure water is a bad conductor of electricity, while acidified water is a good conductor of electricity.
15. Due to the presence of hydrogen bonds between water molecules.
16. Because chlorine is more active than bromine $\text{Cl}_2 + 2\text{KBr} \rightarrow 2\text{KCl} + \text{Br}_2$
17. Because potassium has larger atomic size than sodium, so it can lose its valency electron easily.
18. Because it prevents far harmful UV and most of the medium UV from reaching to the Earth.
19. Because as the height above the sea level increases, the weight of air column decreases.
20. Because it contains about 75 % of the mass of atmospheric envelope.
21. Because there are no weather turbulences occurs in this layer and the air moves horizontally.
22. Because their exhausts contain nitrogen oxides that affect the ozone layer.
23. Due to the absorption of UV rays (emitted from the sun) by ozone layer.
24. Because the temperature decreases at a high rate until it reaches (-90 °C) at its top.
25. Because it contains limited quantities of helium and hydrogen gases only.
26. Because it reflects radio waves transmitted by radio stations and communication centers.
27. Due to scattering of harmful charged cosmic radiations away from the Earth by Van-Allen belts.
28. Because stratosphere layer contains a suitable amount of oxygen gas, faces UV radiations emitted from sun.
29. Because halons and CFCs compounds cause the erosion of ozone layer.
30. Because increasing the concentration of greenhouse gases make trapping of IR radiation which cause rise in the temperature of the Earth.
31. Because it causes melting the snow of the two poles and sever climate changes.
32. Because all pollutants assemble as black clouds that are pushed by wind towards south pole making ozone depletion increase in September of each year.
33. To protect the endangered living organisms from the danger of extinction.
34. Due to is an easy target for hunters due to: Reduced size of its wings, so it is non-flying bird and Short legs, so it can't run fast.
35. Because it is an ecosystem that has a few members and it is severely affected by the absence of one of its species.
36. Because it preserved the bodies of insects inside it from decomposition.
37. Because when it died, it was rapidly buried in snow which preserved it from decomposition.

What happens when...?

1. It causes blindness.
2. It causes death of brain cells.
3. plastic reacts with chlorine gas (which is used in water disinfection) leading to increase in the occurrence rates of cancer.
4. It burns with a bright light and magnesium oxide powder is formed $2\text{Mg} + \text{O} \rightarrow 2\text{MgO}$

5. water molecules are collected together by hydrogen bonds forming hexagonal ice crystals with many spaces between them, so its volume increases and density decrease.
6. It will form magnesium hydroxide which will turn litmus solution into blue $\text{MgO} + \text{H}_2\text{O} \rightarrow \text{Mg}(\text{OH})_2$.
7. Water will be non-polar compound.
8. It will change into positive ion.
9. The temperature will decrease by (-6.5°C) for each 1 km above sea level and the pressure will decrease as we move up.
10. Thickness of ozone layer will be only 3 mm.
11. It will increase the rate of erosion of ozone layer.
12. Medium and far UV rays will reach the surface of the Earth and cause harmful effects.
13. Luminous meteors are formed as a result of their friction with air molecules.
14. The bodies of insects are preserved inside it from decomposition.
15. It will change into petrified wood.
16. It will cause biological pollution which may leads to typhoid, bilharzia and hepatitis diseases.

Locate the position of the following elements in the modern periodic table:

1. Period 2 / zero group.
2. Period 4 / group 2A.
3. Period 3 / group 6A.
4. Period 2 / group 5A.

Compare between each of the following:

Mendeleev's periodic table	Modern periodic table
Elements are classified according to atomic weights	Elements are classified according to atomic number and way of filling the energy sublevels with electrons

Halogens	Alkali metals
<ul style="list-style-type: none"> - Belongs to P-block - They are bad conductors of heat and electricity 	<ul style="list-style-type: none"> - Belongs to S-block - They are good conductors of heat and electricity

Basic oxides	Acidic oxides
<ul style="list-style-type: none"> - They are metal oxides - They are formed by the reaction of metal with oxygen - Dissolve in water giving alkalis - Their solutions turn litmus solution into blue. - Example: Na_2O & MgO 	<ul style="list-style-type: none"> - They are non-metal oxides - They are formed by the reaction of non-metal with oxygen - Dissolve in water giving acids - Their solutions turn litmus solution into red. - Example: CO_2 & SO_2

Metals	Non-metals
<ul style="list-style-type: none"> - Have less than 4 electrons in their outermost energy levels - Tend to lose electrons and change into positive ion - React with oxygen forming basic oxides 	<ul style="list-style-type: none"> - Have more than 4 electrons in their outermost energy levels - Tend to gain electrons and change into negative ion - React with oxygen forming acidic oxide

Remains	Traces
Parts that indicate the remains of an old living organism after death.	It indicates the activity of the old living organism during its life.

Mold	Cast
It's the replica of the internal details of a skeleton of an old living organism.	It's the replica of the external details of a skeleton of an old living organism.

Simple ecosystem	Complicated ecosystem
It is an ecosystem that has a few members and it is severely affected by the absence of one of its species.	It is an ecosystem that has multiple members and it is not affected much by the absence of one of its species.

Reasons of old extinction	Reasons of recent extinction
<ol style="list-style-type: none"> 1. Meteorites impacts with Earth 2. Long glacial age 3. The violent movement of the Earth 	<ol style="list-style-type: none"> 1. Destroying natural habitat 2. Overhunting 3. Environmental pollution

What is meant by:

1. it is a series in which metals are arranged in a descending order according to their chemical activity.
2. They are covalent compounds in which the difference in electronegativity between their elements is relatively high.
3. It is a chemical element that exhibits some properties of metals and some of nonmetals.
4. It is the weight of air column of an atmospheric height on a unit area (1 m^2).
5. it is the phenomenon that appears as brightly colored light curtains seen at both poles (the North and South poles) of the Earth.
6. it is a region in which the atmospheric envelope is inserted in outer space.
7. it is the layer that contains charged ions and it has an important role in wireless communication centers.
8. it is the curved lines that join the points of equal pressure in atmospheric pressure maps.
9. It is the region between mesosphere and thermosphere.

10. they are two magnetic belts surrounding ionosphere and play an important role in scattering harmful charged cosmic radiations.
11. They are gases which make trapping of infrared radiation in the troposphere layer which cause the increase in the Earth's temperature.
12. it is the trapping of infrared radiation in the troposphere layer due to the increase in the % of greenhouse gases which cause the increase in the Earth's temperature.
13. Thinning or losing parts of ozone layer above the south pole.
14. it is the continuous increase in the average temperature of the Earth's near-surface air.
15. They are traces or remains of old living organisms that preserved in sedimentary rock.
16. It is the continuous decrease without compensation in the number of certain species of living organisms until all members of species die out.
17. They are safe areas established to protect endangered species in their homeland.

Mention the name of the scientist who discovered:

- | | |
|---------------|-----------|
| 1. Rutherford | 3. Bohr |
| 2. Moseley | 4. Dobson |

Complete the following chemical equations:

1. $\text{Na} + \text{H}_2\text{O} \rightarrow \text{NaOH} + \text{H}_2$
2. $2\text{NaBr} + \text{Cl}_2 \rightarrow \text{NaCl} + \text{Br}_2$
3. $\text{Mg} + 2\text{HCl} \rightarrow \text{MgCl}_2 + \text{H}_2$
4. $\text{Cu} + 2\text{HCl} \rightarrow \text{No Reaction}$
5. $\text{Zn} + 2\text{HCl} \rightarrow \text{ZnCl}_2 + \text{H}_2$
6. $2\text{K} + \text{Br}_2 \rightarrow 2\text{KBr}$
7. $\text{MgO} + \text{H}_2\text{O} \rightarrow \text{Mg}(\text{OH})_2$
8. $\text{SO}_2 + \text{H}_2\text{O} \rightarrow \text{H}_2\text{SO}_3$

Write the balanced chemical equations:

1. $\text{C} + \text{O}_2 \rightarrow \text{CO}_2$
2. $\text{CO}_2 + \text{H}_2\text{O} \rightarrow \text{H}_2\text{CO}_3$
3. $2\text{NaBr} + \text{Cl}_2 \rightarrow 2\text{NaCl} + \text{Br}_2$
4. $2\text{KI} + \text{Br}_2 \rightarrow 2\text{KBr} + \text{I}_2$
5. $2\text{Na} + 2\text{H}_2\text{O} \rightarrow 2\text{NaOH} + \text{H}_2$
6. $\text{Mg} + 2\text{HCl} \rightarrow \text{MgCl}_2 + \text{H}_2$
7. $\text{O}_2 + \text{UV} \rightarrow 2\text{O}$
 $\text{O} + \text{O}_2 \rightarrow \text{O}_3$
8. $2\text{H}_2\text{O} \rightarrow 2\text{H}_2 + \text{O}_2$

Solve the following problems:

1. Temperature at top = temperature at foot – (h x 6.5) = 23 – (2 x 6.5) = 10 °C
2. Temperature at base = temperature at top + (h x 6.5) = 10 + (6 x 6.5) = 49 °C
3. Height = $\frac{\text{Temperature at foot} - \text{temperature at top}}{6.5} = \frac{25 - (-14)}{6.5} = \frac{39}{6.5} = 6 \text{ Km}$
4. The degree of erosion of ozone layer in an area = 300 – 225 = 45 dobson
The percentage of erosion of ozone layer in this area = $\frac{45}{300} \times 100 = 15\%$

Answer the following:

1. a) fig (a) b) fig (b) c) period (3) group (2A)
2. period 3 – group (3A) – P block elements
3. atomic number of the element follows it in the same period = 6
atomic number of the element follows it in the same group = 13
4. a) Hoffmann's voltameter b) Used for electrolysis of water into its elements
c) (1) is acidified water (2) is oxygen (3) is hydrogen (4) anode (5) cathode
d) 20 cm³
5. Answer: Trilobite → Mold fossil of fish → Archaeopteryx → Mammoth
Trilobite is from invertebrates that appeared in seas
Fish were the first vertebrates
Archaeopteryx links between reptiles and birds which appeared after fish
Mammoth is from the mammals that appeared after reptiles.
6. a) M b) E c) J d) D e) metalloid
7. Don't store the tap water in empty plastic bottles.
Prevention of getting rid of sewage, wastes of factories and dead animals in water
Developing the stations of water purification
Disinfection of the drinking water tanks
8. Establishing natural protectorates areas.
Increasing awareness about the importance of natural life
Establishing gene banks for much endangered species.

1) Complete the following statements

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- ① The alkali metals are --- valent
- ② The suitable medium to form a mammoth fossil is ---
- ③ --- and --- are considered from ozone layer pollutants.
- ④ As we go up 1 Km above sea level the temperature --- with --- °C
- ⑤ Sodium is kept under the surface of ---, to prevent it from the reaction with ---
- ⑥ The elements of group 7A (are) called...
- ⑦ The glass permits the passage of --- rays and visible light.
- ⑧ Moseley located --- and --- elements below its table
- ⑨ The atomic size of Lithium (${}_3\text{Li}$) atom is --- than that of the nitrogen (${}_7\text{N}$) atom and --- than that of sodium (${}_{11}\text{Na}$) atom.
- ⑩ The bond between hydrogen atom and oxygen atom in water molecule is --- bond, while bonds among water molecules are --- bond.
- ⑪ When the temperature of water decreases than 4 °C its --- decreases, while its volume, ---

1- mono

2- Ice

3- freon, halons

4- decreases 6.5

5- Kerosene, moist air

6- halogens

7- Short - waved

8- Lanthanides, actinides

9- Larger - smaller

10- Single covalent, hydrogen

11- density - increases



(12) Ozone gas is formed in two steps which are:

12 - (a) O

(b) O₂



(13) ... is the unit used to measure the degree of Ozone.

13 - Dobson

(14) Meteors burn in ... Layer of atmosphere

14 - mesosphere

(15) ... protectorate is the first established natural protectorate in Egypt.

15 - Ras Mohamed

(16) During the chemical reaction, metal atom tends to ... electrons

16 - Loss

(17) Mendeleev arranged the elements ascendingly according to ..., while Moseley arranged them ascendingly according to ...

17 - their atomic weight -
their atomic number

(18) The highest temperature layer in the atmosphere is ... and the lowest temperature one is ...

18 - thermosphere
mesosphere

(19) The modern periodic table consists of ... horizontal periods and ... vertical groups

19 - 7 - 18

(20) Archaeopteryx is the link between ... and ...

20 - birds -
reptiles

(21) Fossils are used in petroleum ... and determining the age of ...

21 - exploration -
sedimentary rocks

(22) ... and ... are examples of extinct animals

22 - mammoth -
quagga



- (23) During the electrolysis of acidified water by Hofmann's voltameter, the gas evolves at the anode, while the gas evolves at the cathode. 23 - oxygen - hydrogen
- (24) fossils(are) often found in rocks 24 - Sedimentary
- (25) Bromine replaces ... in its salt solution 25 - iodine
- (26) Element X is located in group in the modern periodic table. 26 - (18)
- (27) Eating fish which contains high ratios of lead causes 27 - the death of brain cells.
- (28) The nanometer = m 28 - 10^{-9}
- (29) the number of groups in p-block is ... in modern periodic table 29 - 6
- (30) Sodium reacts with water to produce gas 30 - hydrogen
- (31) The measuring unit of atmospheric pressure is, while the measuring unit of Ozone degree is 31 - bar - Dobson.
- (32) ... bear is one of the most endangered species 32 - Panda
- (33) Elements of group (1A) are called 33 - Alkali metals
- (34) Ultra violet rays (UV) have ... effect, while infrared rays have ... effect. 34 - Chemical thermal
- (35) Most of weather features occur in ... layer. 35 - troposphere



- (36) Both sodium ($_{11}\text{Na}$) and Potassium ($_{19}\text{K}$) are located in the same ... because they have the same number of ... 36-group-electrons in (their) outermost shell.
- (37) Mesosphere Layer is highly rarefied because it contains limited quantities of ... and ... gases only 37-helium-hydrogen
- (38) Water has the ability to dissolve some of covalent compounds such as ..., because it can form ... bond with water molecules. 38-Sugar-hydrogen
- (39) ... is a type of barometer used to determine the day weather, while ... is used to measure the elevation from sea level. 39-anoid-altimeter
- (40) Mendeleev discovered that the atomic weights of element increase on moving from ... side of the table to the ... side in horizontal row, which were later called ... 40-left-right-periods
- (41) Non-metal oxides dissolve in water forming ..., which turn the Litmus solution into ... 41-acids-red
- (42) The atmosphere pressure ... by increasing the length of air column. 42-increases
- (43) fluorine and chlorine exist in a ... state, while iodine exists in a ... state 43-gaseous-solid




- | | |
|---|--|
| (44) ... and ... are metals, which don't react with water. | 44- Copper - silver |
| (45) Ozone layer locates in ... layer. | 45- Stratosphere |
| (46) Radiolaria fossil is an example of ..., but amber fossil is an example of ... | 46- (microfossil) (complete body fossil) |
| (47) ... is an instrument used to determine the possible day weather, but ... to analysis the water by electricity | 47- aneroid - Hofmann's voltameter |
| (48) Lithium and sodium ... on the surface of water as their densities are ... than water density. | 48- float - smaller |
| (49) there are three types of ultraviolet rays, near ultraviolet rays ... and ... | 49- medium - far |
| (50) The atmospheric envelope height above sea level is ..., while normal atmospheric pressure equals ... millibar. | 50- 1000 Km - 1013.25 |
| (51) ... and ... are from greenhouse gases. | 51- Water Vapour - methane |
| (52) Increasing the concentration (of) mercury in drinking water causes ... | 52- blindness |
| (53) Metal oxides are ... oxides, while nonmetal oxides are ... oxides | 53- basic - acidic |



- (54) Each period in the modern periodic table starts with ---- and (ends) with ----
54 (strong metal) ---- (inert gas)
- (55) Ionosphere is surrounded by two magnetic belts known as ---- belts that play an important role in ---- cosmic radiation away from the Earth) ←
55 - Van - Allen, (scattering of harmful charged)
- (56) Alkali metals are located in group ---- but halogens (are) located (in) group ---- in the modern periodic table.
(1A) (7A)
- (57) the atomic size is measured by ---- but the atmospheric pressure is measured by ----
57 - Picometer millibar
- (58) The scientist ---- had discovered the main energy levels.
58 - Bohr
- (59) Sodium oxide is an example of ---- while sulphur oxide is an ----
59 - basic oxide acidic oxide
- (60) water has ---- effect on Litmus paper
60 - neutral
- (61) from the extinct species in the recent times are ---- and ----
61 - dodo bird - quagga
- (62) ---- and ---- are examples of polar compounds.
62 - water - ammonia
- (63) ---- is from extinct birds, while ---- is from endangered birds.
63 - Dodo - (bald eagle)

Word

- ① The strongest non-metal element occurs in the 1st group [1A] 1-group [7A]
- ② The ferns fossil indicates that the environment it lived in was a seafloor 2- a hot and rainy tropical environment.
- ③ Each group in the modern periodic table ends with inert gas 3- Period
- ④ As we move down in group (7A) the metallic property decreases. 4- non-metallic property
- ⑤ Electronegativity decreases as we move from left to right in periodic table 5- Atomic size
- ⑥ the first discovered fossil of mammoth were found preserved in amber 6- Ice
- ⑦ Destroying the habitat is one of the factors that contribute to species adaptation. 7- extinction
- ⑧ Mammoth fossil is an example of microfossils 8- Radiolaria
- ⑨ Dobson assumed that the natural amount of the ozone equals 100 Dobson units 9- 300
- ⑩ Alkali metals are bad conductors of heat and electricity 10- good
- ⑪ Barometer is used to measure the degree of ^⑪atmospheric pressure water pollution 
- ⑫ When the temperature of water decreases to less than 0°C, its density decreases (and) so it floats on water surface in the form of ice crystals 12- 4°C

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13. Dodo bird.

(13) Bald eagle is from the birds that can't fly because of its small wings

(14) The elements of block (p) are organized in 10 groups in the periodic table

14 (d)

(15) Sodium is considered as the most active metal in the periodic table

15 - Cesium

(16) Elements of group 1A are known as halogens

16 - alkali metals

(17) Covalent bond is a weak electrostatic attraction force which arises among water molecules.

17 - hydrogen

(18) Mammoth is one of the examples of petrified fossils

18 - Dinosaur's eggs

(19) Coral fossils indicate that the environment where they lived was hot and rainy tropical environment

19 - ferns

(20) If the metal lost one electron or more, it will become a negative ion

20 - positive

(21) The desert environment is an example of the complex ecosystem.

21 (The tropical forest)

(22) Each period ends with a nonmetal

22 - an inert gas

(23) Chemical pollution of water causes many diseases as typhoid and hepatitis

23 - Biological

(24) panda bear is considered from extinct species

24 - endangered

(25) ozone degree is measured in a unit nanometer

25 -

Dobson



(26) Meteors (burn) in thermosphere Layer.

26- mesosphere
27- Archaeopteryx

(27) Mammoth represents a link between reptiles and birds

(28) Methane molecule is considered as a polar molecule

28- Amonia

(29) Reproduction is the continuous decrease without compensation in the number of a certain species of living organisms until all members of species die out

29- extinction

(30) Amber is an example of mold

30- Complete body fossil

(31) Sodium is kept under the (water) surface

31- Kerosene

(32) Iodine is from liquid halogens

32- Bromine

(33) Transition elements are found below the modern periodic table

33- at the middle of

3- Mention one example for:

(1) Endangered plant

1- Papyrus plant

(2) Fossil of complete body

2- Amber fossil

(3) Petrified fossil

3- Petrified wood

(4) from the greenhouse gases

4- Carbon dioxide gas

(5) Extinct bird

5- Dodo bird


(6) Most active metal (most metallic element in group 1A)

6- Cesium

(7) Endangered bird

7- Bald eagle

(8) A natural protectorate

8-  Bluestone protectorate

No
Date

3. Mention one example for

(10)

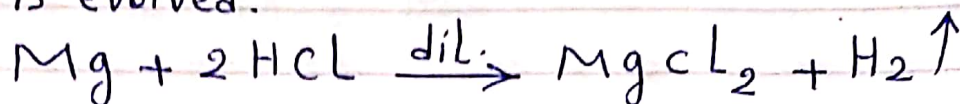
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- | | |
|---|----------------------------|
| (9) A metalloid element | 9 - Silicon |
| (10) Extinct species | 10 - Dodo bird |
| (11) Natural protectorate found in south Sinai in Egypt | 11 - Ras Mohamed |
| (12) An Alkali metal that is kept under surface of paraffin oil only | 12 - Lithium |
| (13) Basic oxide | 13 - Na_2O |
| (14) Halogen in liquid state | 14 - Bromine |
| (15) old extinct animal | 15 - Mammoth |
| (16) Alkali(metal) element | 16 - Sodium |
| (17) Microfossils | 17 - Radiolaria |
| (18) An element doesn't react with water | 18 - silver |
| (19) Type of fossils is considered as a guide for existence of petroleum well | 19 - Foraminifera |
| (20) Simple ecosystem | 20 - Desert |
| (21) Bright phenomenon at the Earth poles | 21 - Aurora Phenomenon |
| (22) A fossil of solid (mold) | 22 - Ammonites fossil |
| (23) polar compound | 23 - water |

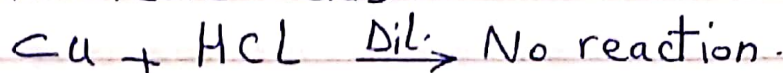


Q1) How can you differentiate chemically between Copper and magnesium [using HCL]?

Magnesium is an active metal reacts with dilute acids giving a salt of an acid and hydrogen gas is evolved.



- While copper is an inactive metal doesn't react with dilute acids.



Q2) Mention one difference between each of the following:

1) simple ecosystem and complicated ecosystem

(Concerning the effect of extinction)

Simple ecosystem	Complicated ecosystem
It has a few members and it is strongly affected by the absence of one of its species	It has multiple members and it is not affected much by the absence of one of its species

2) Group (1A)	Group 7A
Alkali metals located on the left side of the modern periodic table	Halogens located on the right side of the modern periodic table



3) How can you differentiate between carbon dioxide and Sodium oxide

• Carbon dioxide: is an acidic oxide dissolves in water forming acid which turns the litmus solution into red.

• Sodium oxide: is a basic oxide dissolves in water forming alkali which turns the litmus solution into blue.

4) Mention one difference between

a) Mold

It is the replica of the internal details of structure of an old living organism left after its death in sedimentary rocks.

Cast

It is the replica of the external details of the structure of an old living organism left after its death in sedimentary rocks.

b) Positive ion

Resulted from metals, when they loss one electron or more from their outermost shell

Negative ion

resulted from non-metals when they gain one electron or more to their outermost shell



5 cross the odd word and write the scientific term that represents the others:

- 1- Dodo bird / Bald eagle / Mammoth / Quagga.
- 2- Lithium / Cesium / Sodium / Magnesium.
- 3- Halons / nitrogen oxides / carbon dioxide / Chloro fluorocarbon compounds / methyl bromide
- 4- Fluorine - Iodine - Chlorine - Argon
- 5- CO_2 - MgO - Na_2O - CaO
- 6- Rhinoceros - Panda bear - Mammoth - Bald eagle.

The odd word	the scientific term of the others
1. Bald eagle	Extinct species
2. Magnesium	Alkali metals
3- carbon dioxide	Pollutants of ozone layer.
4- Argon	Halogens
5- CO_2	Basic oxides
6- Mammoth	Endangered species

6 Mention one harm for the following

- 1) Global warming: drought waves
- 2) Biological pollutions: Infection by bilharzia.
- 3) Storing water in plastic bottles:
plastic reacts with chlorine gas (used as water disinfectant) leading to the increase in the occurrence rate of cancer.
- 4) far ultraviolet rays on human: It has harmful effect for the life of living organisms.
- 5) Drinking water contains high concentration of mercury: causes blindness.



7 Fill the missing spaces in the table

Water Pollution	Kind of Pollution	Harms
1. Discharging of factories wastes in rivers	--- (1) ---	BLindness
2. --- (2) ---	Biological pollution	(3) ---
3. Using some water areas in cooling of nuclear reactors	--- (4) ---	Destruction of the marine organisms

- 1) chemical pollution
- 2) Mixing animal and human wastes with water,
- 3) Infection by many diseases like bilharzia
- 4) Thermal pollution

8 What are the results based on ... ?

1. Mixing human and animals wastes with water.
2. Increasing the concentration of greenhouse gases in air.
3. Presence of van - Allen belts
4. Storing water in plastic bottles.

Q-1 Biological pollution, and infection by many diseases such as bilharzia, typhoid and hepatitis.

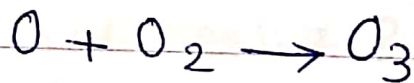
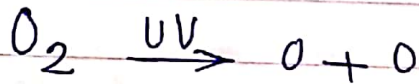
2. Global warming phenomenon.



8-3. Play an important role in scattering of harmful charged cosmic radiations away from the Earth.

4- Plastic reacts with chlorine gas (used as water disinfectant) leading to the increase in the occurrence rate of cancer.

9 Explain the role of ultraviolet rays in formation of ozone gas

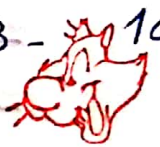


10 What are the reasons of the extinction in recent ages? (write 2 reasons only)

- 1- Overhunting.
- 2- Destroying natural habitat.

11 Write the number which indicates each of the following :

- | | |
|---|--------------------|
| 1- The number of blocks in the modern periodic table | 1- 4 blocks |
| 2- The number of oxygen atoms in ozone molecule. | 2- 3 atoms |
| 3- The normal atmospheric pressure at the sea level (in mb) | 3- $10^{13.25}$ mb |



12 Explain the behaviour of the following elements with water:

1. **Iron**: It reacts with hot water vapour at high temperature only.
2. **Silver**: It doesn't react with water.
3. **Potassium (or) Sodium**: It reacts instantly with water and hydrogen gas evolves which burns with a pop sound.
4. **Magnesium**: It reacts very slowly with cold water.

13 Mention two conditions of fossils preservation (formation)?

- ① Rapid burying of the organism as soon as it died in a medium that preserves it from decomposition as snow or amber.
- ② - Replacing the organic matter of wood by silica part by part.

14 Exclude the unsuitable word and mention what the rest has in common:

1. Li / Na / CL / K
2. Cl₂ / O₂ / I₂ / Br₂

(14-1) CL, the rest are alkali metals.
(14-2) O₂, the rest are halogens.



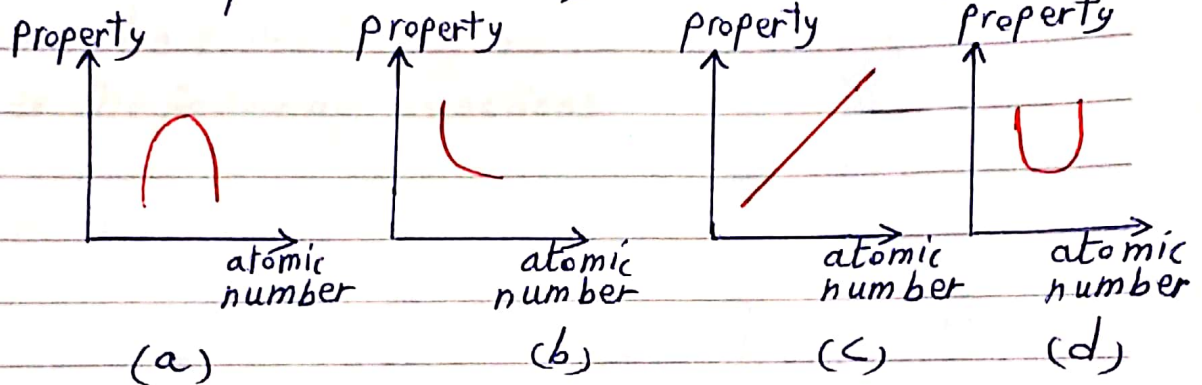
15) Mention the measuring unit of each of the following:

- 1- The wavelength of the ultraviolet radiation
- 2- Atmospheric pressure.
- 3- The degree of ozone

(15-1) Nanometer (2) Millibar (3)- Dobson

16) which of the following figures represents...?

Graduation of the atomic size in the third period.



(b)

17) Study the opposite figure, then answer

- 1- Locate the position of element ${}_{11}\text{B}$
- 2- What are the atomic number of elements E, C in modern periodic table

A	
${}_{11}\text{B}$	E
C	
D	

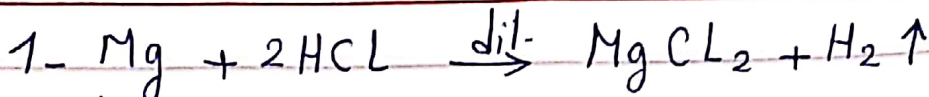
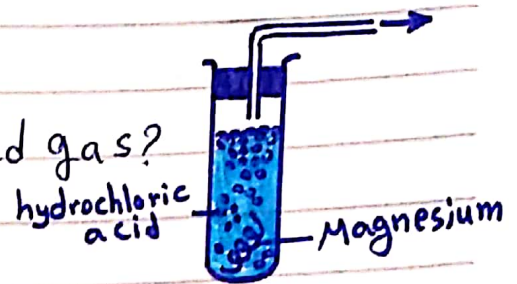
(17-1) $(+11) \begin{matrix} \text{K} & \text{L} & \text{M} \\ 2 & 8 & 1 \end{matrix}$ Period (3)
Group (1A)

(2) Atomic number of element E = $11 + 1 = 12$
Atomic number of element C = $11 + 8 = 19$

18 Examine the figure, then answer the questions

1- Write the chemical equation represents the reaction.

2- What the name of the produced gas?



2- Hydrogen gas.

19 From the opposite figure, answer the following questions

1- This apparatus is called.....

2- Label the figure

3- find the volume of gas (1)

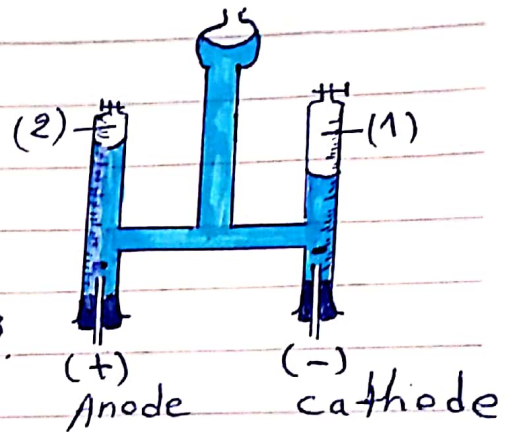
if the volume of gas (2) is 10 cm^3 .

4- Write the chemical equation, which expresses the reaction.

5- What is the name of gas, which collected at each of the following?

a. Anode

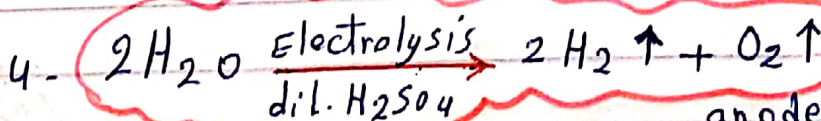
b. Cathode.



1- Hofmann's apparatus

2- (1) hydrogen gas (2) oxygen gas

3- the volume of gas (1) = the volume of gas (2) $\times 2$
 $= 10 \times 2 = 20\text{ cm}^3$.



5- The gas which collected at \leftarrow anode (is) oxygen
 \rightarrow cathode (is) hydrogen

All my best wishes علوم مع غادة صديق

ماضي اجزاء المراجعة من كتاب المعاصر

Part (2), (3) and (4)
 From Science Notebook
 El-Moasser



- 1-The first periodic table of elements was arranged by
- 2-The vertical column of elements in the periodic table is called
- 3-Elements were arranged in Mendeleev's table according to
- 4- Elements in the modern periodic table are arranged according to
- 5-Mendeleev's table showed that the of some elements were wrong and therefore were corrected.
- 6-The modern periodic table consists of periods and groups.
- 7-Elements of s-block are located on the side of the periodic table.
- 8-Elements of p-block are located on theside of the periodic table.
- 9-Elements of (B) groups are called elements and they appear starting from period
- 10- Moseley located and elements below its table.

2- Study the figure which represents a section of the modern periodic table, then answer the questions below :

																N
												V		E		
T	S							P						F		

A. Write the letter that indicates the element:

- Which is from transition elements
-
- Which lies in period (2) and group (4A)
-
- Which is from noble gases

3) Choose the correct answer:

- 1) The number of elements in Mendeleev's periodic table is elements.
(92 – 116 -76 – 67)



- 2) Elements are arranged in Moseley's periodic table in ascending order according to their (mass number – atomic number – valency)
- 3) The nucleus of the atom contains
(positive electrons – negative protons – positive protons)
- 4) The periodic table consists of horizontal periods.
(7 – 10 – 14 – 18)
- 5) The periodic table consists of vertical groups.
(7 – 10 – 18 – 16)

4) Write the contribution of the following scientists:

- 1- Mendeleev.....
.....
- 2- Rutherford.....
.....
- 3- Moseley.....
.....
- 4- Bohr.....
.....

5) Write the scientific term:

- 1) The table in which elements are arranged according to their atomic weight (mass).
(.....)
- 2) Elements found below the periodic table. (.....)
- 3) The table in which elements are arranged according to their atomic number.
(.....)
- 4)-Elements of group zero (0). (.....)



1-The atomic number of an element which lies in group (3A) and period (2) is

- | | |
|-------|-------|
| a- 13 | b- 5 |
| c - 7 | d- 15 |

2-Transition elements appear starting from period

- a- 6 b- 4
c- 7 d- 2

3-Which of the following elements lies in the same period with ${}_{13}\text{Al}$

- a- ${}_{19}\text{K}$ b- ${}_{10}\text{Ne}$
c- ${}_{15}\text{P}$ d- ${}_{6}\text{C}$

4-The chemical properties of ${}_{20}\text{Ca}$ are similar to those of

- a- ^{18}Ar b- ^{19}K
c - ^{12}Mg d- ^5B

5-The element (${}_{16}\text{X}$) lies inin the periodic table.

- | | |
|------------------------------|------------------------------|
| a- period (2) and group (4A) | b- period (2) and group (6A) |
| c- period (3) and group (6A) | d- period (3) and group (4A) |

 $1-{}^2\text{He}$ $2-{}_{11}\text{Na}$ $3-{}_{10}\text{Ne}$

4- 16S

5- $_{19}\text{K}$ 6- ${}_6\text{C}$ 7- ^{18}Ar 8- ${}_3\text{Li}$

1- The element in the 2nd period and group (6A).

2- The element in the 1st period and in group zero.



3- The element in the 3rd period and group 2A.

4- The element in the 3rd period and group (7A).

5- The element in the 2nd period and group zero.

4-Locate the position of the following elements in the modern periodic table:

Element	Atomic no. symbol	No. of period	No. of group
Sulphur	₁₆ S		
Oxygen	₈ O		
Neon	₁₀ Ne		
Potassium	₁₉ K		
Calcium	₂₀ Ca		



A) Give reasons for each of the following:

1- Mendeleev left spaces (gaps) in his table.

.....

2- The atomic size of lithium ${}_3\text{Li}$ is smaller than sodium ${}_{11}\text{Na}$.

.....

3- Methane isn't a polar compound.

.....

4- We can use dilute HCl to differentiate between copper and magnesium.

.....

B) Complete the following sentences:

1- Metals oxides dissolve in water and form....., while nonmetals oxides dissolve in water and form.....

2-.....and.....are examples of polar compound

3- Each period in Modern periodic table starts withand ends with.....

4- Magnesium reacts with dilute acids andgas evolved

5- The atomic size is measured in

6- $\text{MgO} + \text{H}_2\text{O} \longrightarrow$

C) Write the word(s) that means each of the following statements:

1- The ability of the atom in the covalent molecule to attract the electrons of the chemical bond towards itself. ()

2- Metals are arranged descendingly according to their chemical activity ()

3- The gas which is evolved when magnesium reacts with water ()

D) Choose the correct answer:

1- The lowest electronegativity element lies in the group.
(1A - 7A - 1B - 2A)

2- The atomic size of the elements of the same group.....by increasing their atomic number.

(increases - decreases - doesn't change - no correct answer)

- 3- All of these elements are metals except.....
(sodium - sulphur - iron - copper)
- 4- Metallic property of the same group.....by increasing the atomic number.
(increases - decreases - doesn't change - no correct answer)
- 5- In period 2 , the atomic size of oxygen (${}_8\text{O}$) is greater than that of
(${}_6\text{C}$ - ${}_9\text{F}$ - ${}_3\text{Li}$ - ${}_7\text{N}$)
- 6- The period starts with a
(non-metal – metal – inert gas - metalloids)
- 7- Sodium reacts with water and gas evolves.
(water vapour – oxygen – hydrogen - nitrogen)

E) Write the balanced chemical equations for the following reactions:

1. Burning of magnesium strip in oxygen

.....

2. Magnesium with hydrochloric acid

.....

3. Burning coal in air

.....

4. Carbon dioxide with water

.....

5. Dissolving magnesium oxide in water

.....

F) How do you differentiate in the lab between magnesium oxide & sulphur oxide?

.....
.....
.....

G) Arrange the following elements in ascending order according to their atomic size



.....
.....
.....
.....



A) Give reasons for each of the following

1- Alkali metals are monovalent elements.

.....
.....

2- Sodium and potassium are kept in kerosene.

.....
.....

3- Barium is more active than calcium and magnesium

.....
.....

4- All alkaline earth metals sink in water.

.....
.....

5- Cobalt-60 is used in preservation of food.

.....
.....

6- Group 7A elements are known as halogens.

.....
.....

7- Liquefied nitrogen is used to preserve the cornea of the eye.

.....
.....

B) Complete the following sentences:

1-Alkali metals belong to group

2-The valency of alkali metals is

3- The chemical activity of alkali metals as their atomic number increases.

4-The density of most alkali metals isthan water.

5- $2K + Br_2 \longrightarrow$

6- $Br_2 + 2KI \longrightarrow$ +

7- $Cl_2 + 2KBr \longrightarrow$ +

C) Choose the correct answer

1- All these elements are monovalent except

($_{11}Na$ - $_{19}K$ - $_{20}Ca$)

2- The most active metal in group (1A) is

(cesium – sodium - potassium)

3- Alkali metals react with water and gas is produced.

(oxygen– hydrogen – helium)

4-..... form positive ions during the chemical reactions.

(Non-metal – Halogens – Alkali metals)

H

Li

Lithium

Na

Sodium

K

Potassium

Rb

Rubidium

Cs

Cesium

Fr

Francium

D) Use the following table to complete the following statements:

A															E	F	
	B																
C																	

1. Letter represents an alkali metal.
2. Letter represents an inert gas.
3. Letter represents an alkaline earth metal.
4. Letter represents a halogen.
5. Letterrepresents the most active metal .
6. Letter represents the most active non-metal.

E) Complete the following table :

Element	Use
Liquid sodium
Silicon
Cobalt 60



Name: Date:

Give reason(s) for the following:

1. Water is very important in our life.

2. Water is considered a polar compound.

3. Water is considered a unique substance.

4. Water is a very important solvent.

5. Water has high boiling point.

6. Water has high freezing point.

7. Water volume increases when water converts into ice.

8. Water is the most important liquid in extinguishing fires.

9. The inner temperature of the human body doesn't change as the atmospheric temperature changes.

10. Water is a neutral substance.

11. Water has no effect on litmus papers.

12. Water that has high ratio of mercury is very dangerous on human health.

13. Thermal pollution is very dangerous on marine creatures.



Choose the correct answer:

- Which of the following behaviors cause radiant pollution?
 - Discharging of sewage in the sea.
 - Leakage of radioactive materials.
 - Using water in cooling nuclear reactors.
 - (b) and (c).
- Eating fish which contain high ratio of lead causes (death of brain cells – blindness – liver cancer – no correct answer).
- What is the number of pollutants in a water pond minerals, oxygen, organic fertilizers, animal wastes and green algae? (1 – 2 – 3 – 4).
- Mixing animals and human wastes with water causes (thermal – biological – radiant – chemical) pollution.
- The electrolysis of acidified water gives hydrogen gas and oxygen gas at a ratio (2:1 – 1: 3 – 1: 2 – 2: 3).
- A liquid boils at 100° C. what is the other property that proves that this liquid is water? (It dissolves table sugar – Its density decreases on freezing – It has neutral effect on litmus paper – All the previous).

Write the scientific term:

- The process of converting the molecules of some compounds into ions.
.....
- The process of adding substances to water which cause continuous gradual change in water properties and affecting health.
.....
- A type of pollution that arises from natural phenomenon.
.....
- A type of pollution that arises from human activities.
.....
- A type of pollution that takes place because of discharging wastes of factories.
.....
- A type of pollution that's originated from discharging hot water in rivers and seas.
.....



Name: Date:

1- Choose the correct answer:

1. Scientist (Bohr- Mendeleev- Moseley- Hoffman) discovered the main energy levels in the atom.
2. Mendeleev arranged elements of similar properties in (vertical groups – horizontal periods – horizontal groups- vertical periods).
3. Moseley classified elements in his table in an ascending order according to their (atomic weights – atomic numbers – chemical activity – valencies).
4. Elements of (P) block are arranged in (2 -5 -6 -8) groups.
5. The element which locates in period 3 and group 3A is ($_{13}\text{Al}$ – $_{5}\text{B}$ – $_{11}\text{Na}$ – $_{15}\text{P}$).
6. Which of the following elements locates in the third period ($_{19}\text{K}$ – $_{15}\text{P}$ – $_{6}\text{C}$ – $_{3}\text{Li}$).
7. All the following elements are located in group (2A) except ($_{4}\text{Be}$ - $_{20}\text{Ca}$ - $_{11}\text{Na}$ – $_{12}\text{Mg}$).
8. By increasing the atomic number within a period, the (metallic property increases- metallic property decreases - nonmetallic property decreases - atomic size increases)
9. An element (Y), its atomic number is 13 so, the electronic configuration of its ion is (2,8 – 2,8,3- 2,8,3- 2,8,8- 2,8,8,3)
10. All the following are related to CO_2 except (it is acidic oxide- it is nonmetal oxide- its solution turns litmus paper to red- its solution turns litmus paper to blue)
11. All the following elements don't react with dilute HCL except (Cu- Zn- S- C)
12. Elements which have atomic number (2,8,16- 2,10,18- 3,11,19- 4,12,20) are called alkali metals.
13. Alkali metals have the following properties except (they have low density- they conduct electricity- they conduct heat- they don't react with water)
14. All the following elements are alkaline earth metals except ($_{4}\text{Be}$ - $_{12}\text{Mg}$ - $_{19}\text{K}$ - $_{20}\text{Ca}$)
15. Alkaline earth metals react with water and (H_2 - O_2 - N_2 - He) gas evolves.
16. The element that forms a positive ion and carries two positive charges during chemical reactions is (Na- Mg- K- Li).
17. All of these elements are metalloids except (boron – silicon – Sulphur – arsenic)

2- Locate the position of the following elements in the modern periodic table:

1. $_{4}\text{Be}$
2. $_{12}\text{Mg}$



3. ${}_{19}\text{K}$
4. ${}_{20}\text{Ca}$
5. ${}_5\text{B}$
6. ${}_6\text{C}$
7. ${}_1\text{H}$
8. ${}_8\text{O}$
9. ${}_{17}\text{Cl}$
10. ${}_{10}\text{Ne}$

3- Give reasons for the following :

1. The use of radioactive Co 60 in food preservation.
.....
.....
2. Elements of the same group have similar properties.
.....
.....
3. Alkali metals are kept under kerosene in the lab.
.....
.....
4. Elements of group (1A) are known as alkali metal.
.....
.....
5. Rubidium and cesium elements sink in water.
.....
.....
6. The reaction of potassium with water is stronger than that of sodium.
.....
.....
7. Naming the metals of group (1A) by alkali metals.
.....
.....
8. Liquefied nitrogen is used in preservation of cornea of eye.
.....
.....
9. The chemical activity of alkaline earth metals increases by increasing their atomic size.
.....
.....
10. Sodium (${}_{11}\text{Na}$) is more active than magnesium (${}_{12}\text{Mg}$).
.....
.....
11. Halogens are not exist in nature in elementary state.
.....
.....



12. Halogens are called by this name.

13. Elements of the same group have similar properties.

14. In groups, by increasing the atomic number, the atomic size increases.

15. Methane and hydrogen sulphide are not considered from polar molecules

16. Water is considered a polar compound.

17. Water is a very important solvent.

18. Water has high boiling point.

19. Water volume increases when water converts into ice.

20. Thermal pollution is very dangerous on marine creatures.

4- What is meant by:

1. Chemical activity series.

2. Atom.

3. Positive ion.

4. Metalloids.

5. Nonmetals.

6. Electro negativity.

7. Polar compounds.

8. Ionization process.



5- **Compare between :**

1. Acidic oxides and basic oxides.
2. Mendeleev periodic table and Modern periodic table.
3. Copper and magnesium using HCL.
4. Alkali metals and halogens.

6- **Mention one use for each of the following:**

1. Silicon slides.....
2. Liquid Sodium.....
3. Liquefied nitrogen.....
4. Cobalt 60.....

7- **Explain the behavior of the following elements with water:**

1. Iron
2. Silver
3. Potassium

8- **Write the balanced chemical equations which express reaction of :**

1. Carbon dioxide with water.
2. Magnesium with dil. Hydrochloric acid.
3. Bromine with table salt.
4. Chlorine with potassium iodide.
5. Burning of magnesium strip in oxygen.
6. Burning coal in air.
7. Dissolving magnesium oxide in water.



9- Study the figure which represents a section of the modern periodic table, then answer the question below it.

																N			
														V		E			
	S																	F	
T									P										

A. Write the letter that indicates the element

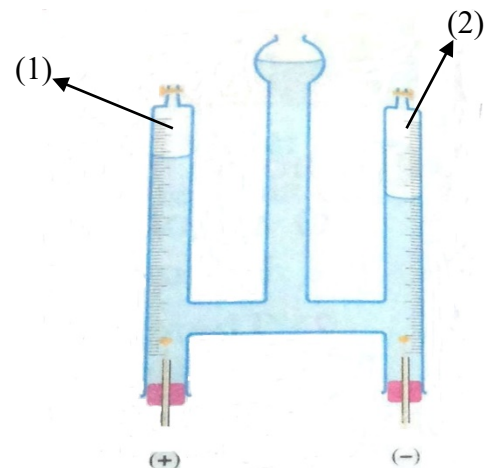
- Which is from transition elements

-which lies in period (2) and group (4A)

-Which is from noble gases

10- Look at the next figure then answer:

1- Label the next figure.



11- Use the following table to complete the following statements:

[illegible]

1. Letter represents an alkali metal.
2. Letter represents an inert gas.
3. Letter represents an alkaline earth metal.
4. Letter represents a halogen.
5. Letter represents the most active metal .
6. Letter represents the most active non-metal.

Choose the correct answer:

- 1 The number of elements in Mendeleev's periodic table is elements.
 - a. 92
 - b. 116
 - c. 76
 - d. 67
- 2 The scientist who discovered that the nucleus of the atom contains positively charged protons is
 - a. Bohr
 - b. Mendeleev
 - c. Rutherford
 - d. Moseley
- 3 The transition elements start to appear from the beginning of the period.
 - a. second
 - b. third
 - c. fourth
 - d. fifth
- 4 By increasing the atomic number within groups, the atomic size
 - a. does not change
 - b. increases
 - c. decreases
 - d. no correct answer
- 5 The metallic property gradually in the groups from the top to the bottom.
 - a. does not change
 - b. increases
 - c. decreases
 - d. no correct answer
- 1 The solution of magnesium oxide in water turns the violet litmus solution
 - a. red
 - b. blue
 - c. black
 - d. white

- 1 Elements of group (1A) are known as
 - a. halogens
 - b. alkali metals
 - c. inert gases
 - d. alkaline earth metals
- 2 The most active (strongest) metals lie in group
 - a. 7A
 - b. 18
 - c. 1A
 - d. 2A

3 Halogens are named by this name because they react with metals forming

- a. solids b. salts
c. acids d. bases

4 In water molecule, the angle between two single bonds is

- a. 60° b. 105°
c. 104.5° d. 145.5°

5 The ice crystal has a/an shape.

- a. octagonal b. quadrilateral
c. pentagonal d. hexagonal

6 is located between stratosphere and mesosphere.

- a. Tropopause
b. Stratopause
c. Mesopause
d. Thermopause

Choose the correct answer:

1 The measuring unit of atmospheric pressure is

- a. bar b. millimeter
c. millibar d. bar and millibar

2 The temperature at the top of mesosphere layer reaches

- a. 76°C
c. 60°C
- b. -90°C
d. 1200°C

3 Ozone layer is measured in a unit called

- a. km b. Dobson
c. UV d. mm³

- 4** All the following causes erosion of ozone layer except
- a. freon b. aerosol
c. nitrogen oxides d. iron oxides
- 5** fossils were found buried in snow completely.
- a. Ferns b. Insects
c. Nummulites d. Mammoth
- 6** is (are) of the most important causes of the recent extinction age.
- a. Volcanic eruption b. Falling of icebergs
c. Falling of meteorite d. Overhunting and environmental pollution

Choose the correct answer:

- 1 Elements are arranged in Mendeleev's periodic table in ascending order according to
 - a. atomic weight
 - b. atomic number
 - c. chemical activity
 - d. valency
- 2 is the most metallic element in group (1A).
 - a. Na
 - b. Li
 - c. Cs
 - d. B
- 3 Elements of group (17) are known as
 - a. inert gases
 - b. alkali metals
 - c. halogens
 - d. alkaline earth metal
- 4 In water molecule, one oxygen (O) atom combines with two hydrogen (H) atoms by two bonds.
 - a. ionic
 - b. hydrogen
 - c. covalent
 - d. b and c are correct

5 are used for measuring the atmospheric pressure.

a. Thermometers

b. Galvanometers

c. Barometers

d. Voltameters

6 fossils are found in El-Mokattam Mountain.

a. Ferns

b. Index

c. Nummulites

d. Dinosaurs' bones

Choose the correct answer:

1 The scientist who left vacancies in his table to be filled with suitable discovered elements in the future is

a. Moseley

b. Rutherford

c. Bohr

d. Mendeleev

2 Potassium reacts with water.

a. instantly

b. very slowly

c. after two hoursd.

d. no correct answer

3 The chemical activity of alkali metals increases as the atomic size

a. increases

b. decreases

c. is very small

d. no correct answer

4 All the following dissolve in water except

a. sugar

b. table salt

c. oil

d. (a) and (b)

5 The air moves in the stratosphere layer.

a. horizontally

b. vertically

c. inclined

d. no correct answer

6 An intermediate link between reptiles and birds is

a. nummulites

b. trilobites

c. archaeopteryx

d. foraminifera

Choose the correct answer:

- 1 The modern periodic table consists of horizontal periods.

a. 7	b. 10
c. 14	d. 18
- 2 is the measuring unit of the atomic radius of an atom.

a. Minute	b. Gram
c. Picometer	d. Second
- 3 Most of alkali metals have density.

a. high	b. low
c. the same	d. no correct answer
- 4 The density of pure water in a solid state is

a. less than its density in a liquid state
b. equal to its density in a gaseous state
c. greater than its density in a liquid state
d. greater than its density in a gaseous state
- 5 Troposphere contains of atmospheric water vapor.

a. 90%	b. 99%
c. 9%	d. 75%
- 6 is formed when mud fills shell cavity and solidifies.

a. Petrified wood	b. Mold
c. Cast	d. Trace

Choose the correct answer:

- 1 The elements which occupy the middle in the modern periodic table are called elements.

a. transition	b. alkali
c. alkaline earth	d. noble
- 2 The polarity of water is that of ammonia.

a. more than	b. less than
c. equal to	d. no correct answer
- 3 is considered from halogens.

a. Sodium	b. Chlorine
c. Helium	d. Calcium
- 4 All the following are from properties of water except

a. it has a neutral effect on litmus papers
b. it is a polar compound
c. its volume increases by freezing
d. it decomposes by heat into its elements
- 5 The temperature decreases with a rate of at 2 km above sea level.

a. 5.6	b. 6.5
c. 13	d. 26
- 6 is/are an example of microfossils.

a. Mammoth	b. Ferns
c. Foraminifera	d. Archaeopteryx

Choose the correct answer:

- 1 In the modern periodic table, the elements which are identical in properties lie in the same
 - a. period
 - b. group
 - c. nucleus
 - d. energy level
- 2 Each period in the modern periodic table starts with a/an
 - a. metal
 - b. metalloid
 - c. non-metal
 - d. inert gas
- 3 Alkali metals are kept under the surface of
 - a. water
 - b. kerosene
 - c. paraffin oil
 - d. (b) and (c)
- 4 The effect of pure water on litmus paper is
 - a. basic
 - b. neutral
 - c. acidic
 - d. alkaline
- 5 All the following are greenhouse gases except
 - a. oxygen
 - b. nitrogen oxides
 - c. chlorofluorocarbon
 - d. carbon dioxide
- 6 are from the famous extinct animals in old times.
 - a. Dodo bird and mammoth
 - b. Dinosaurs and quagga
 - c. Dinosaurs and mammoth
 - d. Gray bear and panda bear

Choose the correct answer:

- 1 The chemical properties of calcium ($_{20}\text{Ca}$) are similar to those of
 - a. $_{19}\text{K}$
 - b. $_{12}\text{Mg}$
 - c. $_{25}\text{Mn}$
 - d. $_{3}\text{Li}$

2 All the following elements are metalloids except

- a. tellurium b. silicon
- c. boron d. bromine

3 is used in food preservation.

- a. Liquid sodium b. Cobalt-60
c. Liquefied nitrogen d. Silicon

4 The volume of hydrogen gas evolving from water electrolysis equals the oxygen gas volume.

- a. that of b. double
c. half d. four times

5 Degree of ozone under STP condition is Dobson units.

- [illegible]

6 is from extinct birds which was characterized by its short legs and reduced size of its wings.

- a. Panda bear b. Ibis bird
- c. Bald eagle d. Dodo bird

Choose the correct answer:

1 The atomic number of the element that exists in group (7A) and period (2) is

- a.12 b.7 c.9 d.17

2 During the chemical reaction, a non-metal atom tends to gain electrons and changes into

- a. metal b. inert gas c. negative ion d. positive ion

3 Halogen molecules are molecules.

- a. monovalent
- b. divalent
- c. trivalent
- d. tetravalent

4 Arsenic increases the infection rate by

- a. liver cancer
- b. brain cancer
- c. hepatitis
- d. typhoid

1 is/ are used in fire extinguishers.

- a. Methyl bromide
- b. Halons
- c. UV rays
- d. Nitrogen oxides

1 protectorate is the first established natural protectorate in Egypt.

- a. Saint Cathrine
- b. Ras Mohamed
- c. Wadi Hetan
- d. Petrified forest

لمتابعة المراجعات والامتحانات

منتدى مصطفى شاهين التعليمي

[/https://www.mostafashahen.com](https://www.mostafashahen.com)

Q1: Choose the correct answer:

1. Metal oxide are.....oxide.
a. acidic **b. basic** c. amphoteric
2. The coldest atmospheric layer is.....
a. Troposphere b. thermosphere **c. mesosphere**
3. The.....is used in preservation agricultural crops.
a. **Methyl bromide gas** b. halons c. nitrogen oxide
4. The elements of group (7A) is called
a. Alkali metals **b. halogens** c. alkaline earth metals
5. There isbonds between water molecules.
a. Ionic **b. hydrogen** c. covalent
6. The scientist who discovered the main energy levels is.....
a. Mendeleev **b. bohr** c. Rutherford
7. Complete body fossils of insects are found preserved in.....
a. **Amber** b. snow c. ocean
8. All the following are greenhouse gases except.....
a. CO_2 **b. O_2** c. CH_4
9. The density of ice is.....the density of water.
a. **Less than** b. more than c. equal to
10. the normal atmospheric pressure at sea level equalmill bar.
a. **1013.25** b. 76 c. 1.013 d. 100

11. The atomic number of an element that exists in group (7A) and period (2) is.....

- a. 12 b. 7 c. 9 d. 17

12. Ozone layer is found in.....layer.

- a. troposphere b. stratosphere c. mesosphere

13. Each period in the table starts with

- a. metalloids b. metal c. nonmetal d. inert gas

14.indicates extinction.

- a. fossils b. protectorate c. ecosystem d. van allen belt

15. elements of group (1A) is known as.....

- a. halogens b. alkali metals c. inert gases d. active gases

16.Is the most metallic element in group (1A).

- a. sodium b. bromine c. lithium d. cesium

17.causes increase in the earth temperature.

- a. uv rays b. infrared rays c. cosmic rays d. ionosphere

18. pollution of water with wastes of man and animals cause.....

- a. death of brain cell b. blindness c. hepatitis d. liver cancer

19. All of the following are extinct species except

- a. dodo bird b. ibis bird c. dinosaurs d. mammoth

20. non- metal oxide dissolve in water forming.....solution.

- a. acidic b. alkaline c. neutral d. basic

21. The continuous increase in the temperature of the earth.....

- a. aurora b. erosion of ozone c. global warming

22. The temperature of a height of 4 km is.....C°, if the temp at sea level is 28 C°.

- a. 20 b. -2 c. -28 d. -24

23.reacts fast with water and produce H₂ gas that burn with pop sound.

- a. Zn b. Fe c. Cu d. K

24.is a mammal that is a midway between horse and zebra.

- a. panda b. dodo bird c. mammoth d. quagga

25. when sodium react with chlorine , the formula of the result compound is.....

- a. Naf b. NaCl c. NaCl₂ d. Nai

26. the device that is used for electrolysis of water is.....

- a. ammeter b. voltameter c. Hoffman's voltameter

27. the element which is lie in the third period and fifth group, the number of electrons in its ion is

- a. 7 b. 15 c. 18 d. 20

28. from the extinct animals in ancient period.....

- a. dinosaurs b. panda c. ice bird d. rhinoceros

29. Each alkali metal lies in the.....of each period.

- a. start b. middle c. end d. bottom

30. if the volume of the collected gas at the cathode in the electrical analysis of water is 10 cm^3 , so the volume of the gas at the anode cm^3

- a. 5 b. 10 c. 20 d. 30

31. A trivalent non metal element lies in the third period , the number of the electrons in the outermost level.....

- a. 5 b. 8 c. 9 d. 18

32. the.....layer has pressure equals 90 millibar.

- a. troposphere b. stratosphere c. mesosphere

33. from the examples of microfossils.....

- a. mammoth b. nummulites c. Radiolaria d. poly podiates

34. dinosaur eggs are consideredfossils.

- a. petrified b. cast c. mold d. trace

35. the nobel gases are located ingroup.

- a. 7A b. 8 c. 28 d. 0

36. all of the following react with with the diluted acid except.....

- a. zinc b. iron c. carbon d. magnesium

37. meteors are formed in.....layer.

- a. mesosphere b. ionosphere c. stratosphere

38. the liquified nitrogen is used in

- a. saving cornea b. food saving c. cooling of nuclear reactor

39. fossils are found in.....rocks.

- a. igneous b. metamorphic c. volcanic d. sedimentary

40. ozone degree is measured in a unit called.....

- a. millimeter b. Dobson c. picometre d. nanometre

41. eating fish contain high concentration ofcause death of brain cells.

- a. mercury b. arsenic c. lead d. iron

42. the air in the troposphere layer moves.....

- a. horizontally b. vertically c. upright d. inverted

43. the element, whose atomic number is 15 is similar in its chemical properties as the element whose atomic number is.....

- a. 5 b. 7 c. 17 d. 19

44. ice crystals hasshape .

- a. pentagonal b. hexagonal c. octagonal

45. all of the following are greenhouse gases except

- a. CO_2 b. O_2 c. CH_4 d. N_2O

46. The first protectorate in Egypt is.....

- a. ras Mohamed b. wadi el ryan c. panda

47. the modern periodic table contain.....elements.

- a. 26 b. 92 c. 100 d. 118

48. which of the following is the halogen that exist in a solid state.....

- a. fluorine b. iodine c. chlorine d. bromine

49. the device that is used for determining the elevation from sea level.....

- a. aneroid b. altimeter c. thermometer

50. the strongest non metal element is

- a. iodine b. fluorine c. bromine d. aluminum

51. elements of the modern periodic table are classified into.....blocks .

- a. one b. two c. three d. four

Choose the correct answer

1-meteors burns in(mesosphere –ionosphere – stratosphere)

2-all of theses Green house gases except.....(CO_2 - O_2 - N_2O – CH_4)

3-from endangered species(dinosaur – bald eagle – dodo bird)

4-ozone degree is measured byunit

(millibar – nanometer – Dobson – picometre)

5-.....has highest electronegativity (fluorine – cesium – lithium)

6-all of the following elements are metalloids except

(silicon - boron - bromine)

7- mammoth fossil is an example offossil

(cast – mold – complete body)

8-the scientisthad discovered main energy levels

(Moseley - Hoffman – bohr – Mendeleev)

9-.....is an example for microfossil

(mammoth – ferns – foraminifera)

10-the air in troposphere layer moves.....

(horizontally –vertically – inclined)

11-which of the following elements is located in third period

(19K – 6C – 15P)

12-Bilharzia is due to thepollution of water

(biological – thermal - chemical)

13-ice crystals haveshape

(hexagonal – pentagonal – tetragonal)

14-the atomic radius is measured in.....

(picometre – kilometer – nanometer)

15-.....is the first protectorate in Egypt

(Ras Mohamed – Wadi Elhetan – panda)

**16-transition element starts to appear from the beginning of the.....
..... period**

(fourth – third – fifth)

17-.....is used in extinguishing fires

9methyl bromide – halons - nitrogen oxide)

18-P block containsgroups

(10 – 2 – 6)

19-which of the following is an acidic oxide ?

(CO₂ – MgO - Na₂O)

20-There arebonds between water molecules

(covalent – ionic – hydrogen)

21-fossils are preserved inrocks

Mrs rasha Hussien

01003285561

Preparatory two

(sedimentary – metamorphic – ingenious)

22-we usedto determine altitude of planes

(aneroid – altimeter – thermometer)

23-hottest atmospheric layer is(stratosphere-mesosphere – thermosphere)

24-the coldest atmospheric layer

(stratosphere-mesosphere – thermosphere)

25-strongest metal locates in group(7A-1A-Zero)

26-ozone layer preventsrays to transmit by 100%

(near – medium – far)

27-the gas which is evolved on reacting alkali metal with water is

(oxygen – hydrogen – nitrogen)

28-metal oxides areoxides

(acidic – basic – both of them)

29-.....react instantly with water and hydrogen gas evolves

(K and Na – Cu and Ag – Zn and Fe)

30-.....is a polar compound (petrol – water – alcohol)

31-mendeleev arranged elements according to

(atomic weight – atomic number – electronegativity)

32-each period starts with

(metal – non-metal –inert gas)

33-.....is a halogen

(sodium – chlorine – helium)

34-complete body of insect is preserved in

(amber – snow – ocean)

35- mammoth fossil is preserved in(amber –snow –ocean)

36-fossils play important role in petroleum exploration

(foraminifera – radiolaria – both of them)

37-the element of group (7A) Are known as

(halogen – alkali – metalloid)

38- we usedto preserve food because it emits gamma rays
can kill microbes

(Co 60 – Si – liquefied nitrogen)

39-.....extinct bird (bald eagle – dodo bird – ibis bird)

40-.....fossil that is used to indicate the environment ,where
they lived was tropical, hot and rainy

(nummulite – ferns – coral)

41-the volume of oxygen evolved during electrolysis of water
.....the volume of hydrogen

(equal – half – twice)

42-temperature decreases every 1KM bydegree

(13 – 6.5 – 3)

43-number of elements in modern table is

(67 – 100 – 118)

44-is the most important pollutant of ozone layer
(CFCs – halons – methyl bromide)

45-.....layer is responsible for radio stations
(exosphere – ionosphere – stratosphere)

46-strongest metal is(fluorine – cesium – lithium)

Model answer

1- a 2-b 3 –b 4-c 5-a 6-c 7-c 8-c 9-c 10-b 11-c 12-a 13-a 14-a

15-a 16-a 17-b 18- b 19-a 20-c 21-a 22-b 23-c 24-b 25-b 26 –c

27-b 28-b 29-a 30-b 31-a 32-a 33-b 34-a 35-b 36-b 37-a 38-a

39-b 40-b 41 –b 42-b 43-c 44-a 45-b 46-b

GOOD LUCK

FINAL REVISION



Prep Two

Choose the right answer:

1-When Sodium reacts with chlorine, the formula of the resulted compound is —

a)NaF

B-NaCl

C- Na₂O

D-NaI

2-The device which used in the electrical analysis of water is —

a)Ammeter

B-Voltmeter

C- Hoffman Voltmeter

D-Aneroid

3-The element which is lie in the third period and the fifth group the number of electrons in its ion is —

a)7

B-15

C- 18

D -20

4-The Ozone layer lies in —

a)Thermosphere

B-Stratosphere

C-Troposphere

D-Mesosphere

5-There are complete fossils preserved inside —

a)Ammonites

B-Amber

C- Igneous rocks

D- Ice

6-From extinct animals in ancient period.....

a)Dinosaurs

B-Panda

C-Rhinoceros

D-Dodo bird

FINAL REVISION



Prep Two

Choose the right answer:

1-Each Alkali metal lies in the ——— of each period

- a)start b)middle c)end d)bottom

2-If the volume of the collected gas at the cathode in the electrical analysis of water is 10 cm^3 , so the volume of the gas at the anode, ——— cm^3

- a)5 b)10 c)20 d)30

3-A trivalent non-metal element lies in the third period, the number of electrons of its outermost energy

- a)5 b)8 c)9 d)18

4-The..... layer has pressure equals 90 millibar.

- a)Thermosphere b)Stratosphere c)Troposphere d)Mesosphere

5-From the examples of microfossils

- a)Mammoth b)poly podiales c)Foreminefra d)Nummulite

6-Dinasour eggs are considered fossils

- a)Petrified b)Cast c)Mol d)Trace

FINAL REVISION



Prep Two

Choose the right answer:

1-The noble gases are located in group.

- a) 7A b) 8 c) 2B d) Zero

2-Each of the following elements react with the diluted acids except

- a) Zinc b) Iron c) Carbon d) Magnesium

3-Meteors are formed in

- a) Mesosphere b) Ionosphere c) Exosphere d) Stratosphere

4-From the endangered creatures is

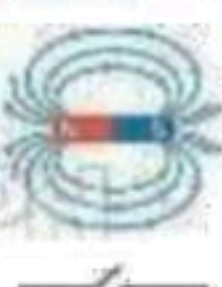
- a) Dinosaurs b) Quagga c) Dodo birds d) Panda

5-The liquid Nitrogen is used in reactor

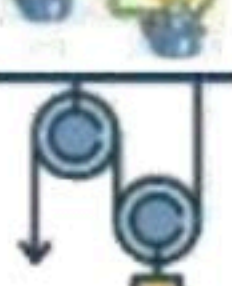
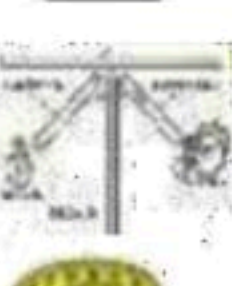
- a) saving cornea b) cooling of nuclear reaction
c) manufacturing of foam boxes d) food saving

6-Fossils are found in rocks.

- a) metamorphic b) sedimentary c) volcanic d) igneous



General exercises (1)



1 Choose the correct answer between brackets :

- 1 form positively charged ions when they enter in the chemical reactions.
(Inert gases - Nonmetal - Halogens - Alkaline Earth metals)
- 2 The elements of group (7A) are called
(alkali metals - halogens - inert gases - alkaline Earth metals)
- 3 Meteors are formed in (exosphere - thermosphere - mesosphere - stratosphere)
- 4 is one of the most important causes of the recent extinction age.
(Volcanic eruption - Falling of icebergs - Falling of meteorites - Overhunting and environmental pollution)

2 Write the chemical equations representing the following :

- 1 Dissolving of magnesium oxide in water.
- 2 The reaction between chlorine gas and potassium bromide.
- 3 The electrolysis of water.

3 Mention one difference between each of :

- 1 Flourine molecule and helium molecule.
- 2 Natural and industrial water pollutants.
- 3 Troposphere and stratosphere.
- 4 Simple and complicated ecosystems.

4 Give reasons :

- 1 Water molecule is from the polar molecules.
- 2 Sodium is kept in kerosene.





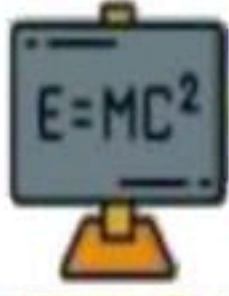
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Final Revision



- 3 The lower part of stratosphere is suitable for plane flying.



- 4 The bald eagle is one of the endangered species.



- 5 Write brief notes on :

- 1 The relation between water density and its temperature.



- 2 The relation between rising above sea level and atmospheric pressure.



- 3 Global warming phenomenon.



- 6 To who are these works/achievements attributed ?

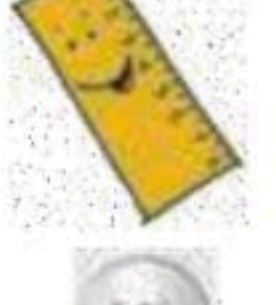
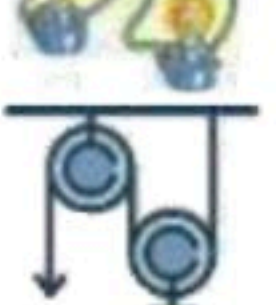
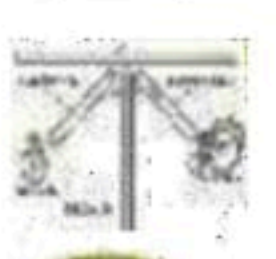
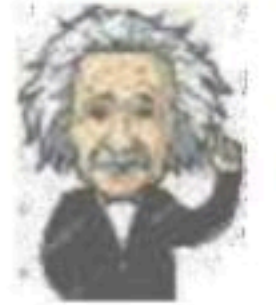
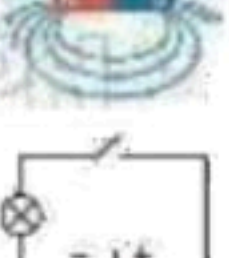
- 1 The discovery that the nucleus of the atom contains positively charged protons.



- 2 The discovery of the existence of two magnetic belts around planet Earth.



- 3 Issuing a red list for the endangered species.



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Model Answer

Answer Q1

- 1- Cancelled
- 2- Alkali metals
- 3- Mesosphere
- 4- Overhunting and environmental pollution.

Answer Q2

- 1- $\text{MgO} + \text{H}_2\text{O} \rightarrow \text{Mg}(\text{OH})_2$
- 2- $\text{Cl}_2 + \text{KBr} \rightarrow \text{KCl} + \text{Br}_2$
- 3- $\text{H}_2\text{O} \xrightarrow{\text{electrolysis}} 2\text{H}_2 + \text{O}_2$

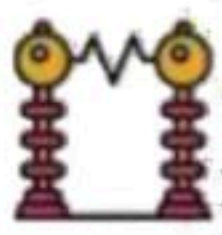
Answer Q3

1-

Fluorine molecule	Helium molecule
diatomic molecule (F_2)	monoatomic molecule. (He)

2-

Natural water Pollutants Their resources are natural phenomena Example: <ol style="list-style-type: none"> 1- Occurrence of volcanoes. 2- Lightening accompanied by thunderstorms. 3- Death of living organisms. 	Industrial water Pollutants Their resources are different human activities
--	--



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3-	Troposphere	Stratosphere
Thickness	13 Km	37 Km
Atmospheric Pressure	100 mb	1 mb
Temperature	-60°C	Zero°C
Importance	All weather phenomena occur in it as it contains 75% of the air mass. It organizes the Earth's temperature as it contains 99% of the atmospheric water vapour.	It contains ozone layer which protect the Earth from harmful ultraviolet rays. The

4-

	Simple ecosystem	Complicated ecosystem
Definition	It is the ecosystem which contains few members of living organisms	It is the ecosystem which contains multiple members of living organisms
The effect of absence of one of its species	It is strongly affected due to rarity of alternatives	It is not effected due to presence of many alternatives
Example	Desert	Tropical forest

Answer Q4

- 1- Because the difference in electronegativity between the elements forming its molecule is relatively high.
- 2- To prevent its reaction with moist air as it is an active metal.
- 3- Because there is no clouds or weather disturbances and the air moves horizontally.
- 4- Cancelled





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Answer Q5

- 1- When the temperature of water goes lower than 4°C , water molecules are collected together by hydrogen bond forming ice crystals which have hexagonal shape with large volume and large spaces between them so density of water decreases on freezing
- 2- The atmospheric pressure decreases as we go up above sea level because the weight of the air column decreases as we go up.
- 3- It is the continuous increase in the average temperature of the Earth's near surface air due to the increase in percentage of green house gases.

Answer Q6

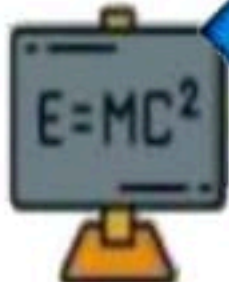
- 1- Rutherford
- 2- James Van Allen
- 3- Cancelled

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General exercises (2)



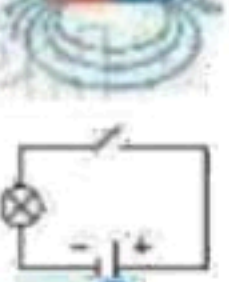
: Complete the following statements:

- ① In Mendeleev's table the elements are arranged according to their atomic weight.
- ② The Newzealand scientist Rutherford discovered that the atom contains of positive charge.
- ③ The alkali metal elements are valent.
- ④ Halogens lie in the elements of group.



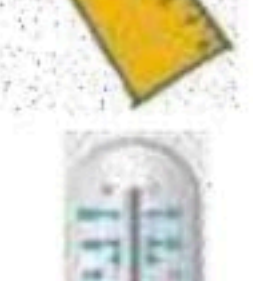
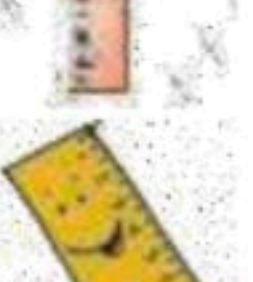
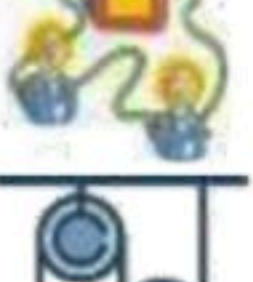
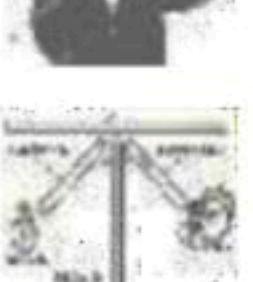
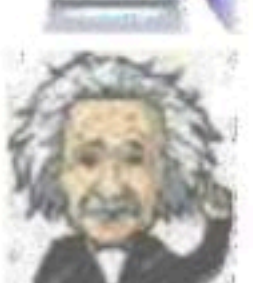
: Choose the correct answer for each of the following:

- ① The number of known elements is.....
a- 216 b- 118 c- 316 d- 16
- ② The number of negative electrons in the atom in its normal state equals
a- number of protons. b- number of neutrons.
c- twice the number of protons. d- half the number of neutrons.
- ③ The atomic number of the elements equals:
a- Neutron numbers inside the nucleus.
b- Number of electrons which rotate in the energy levels around its atom's nucleus.
c- The number of protons inside the nucleus.
d- b&c are correct.
- ④ The density of pure water in solid state is:
a- Less than its density in liquid state.
b- Equal to its density in vapour state.
c- Greater than its density in liquid state.
d- Greater than its density in vapour state.
- ⑤ From the most common recently extinct species is.....
a- Dodo bird. b- Quagga.
c- Golden frog. d- All the previous.



: Mark sign (✓) in front of the correct answer and sign (x) in front of the wrong ones in the following.

- ① The alkaline earth metals are good conductors of heat and electricity.





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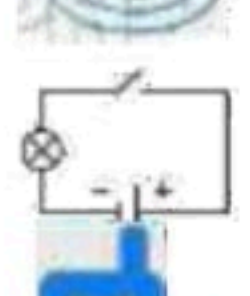
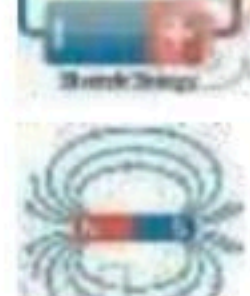
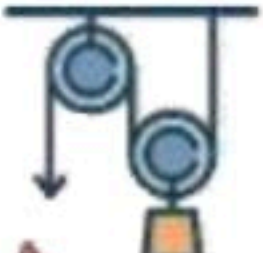
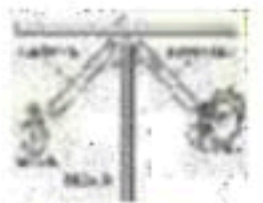
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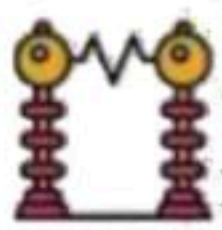
- ② Halogens are univalent metals.
- ③ The compounds of nitrogen oxides are from the pollutants which affects the ozone layer.
- ④ There are fossils of complete insects kept in amber.
- ⑤ The elements are arranged descendingly according to their atomic weight in the modern periodic table.

✗ Write the scientific term for the following statement.

- 1- An atmosphere layer at which the air moves vertically.
- 2- The traces and remains of living organisms which are kept in sedimentary rocks.
- 3- Elements that have both properties of metals and non-metals.
- 4- An atom lost or gained one electron.
- 5- A bond that exists between water molecules.



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Model Answer

Complete

- 1- In an ascending order (ascendingly)
- 2- Protons
- 3- Mono
- 4- 7A

Choose

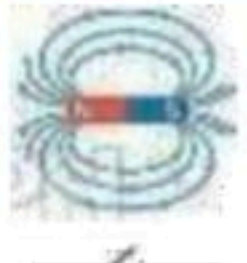
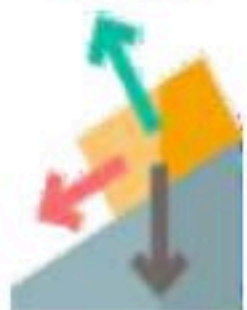
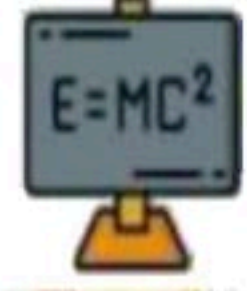
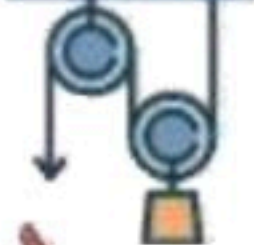
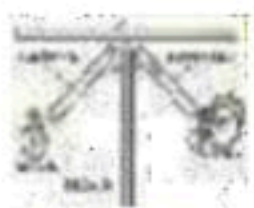
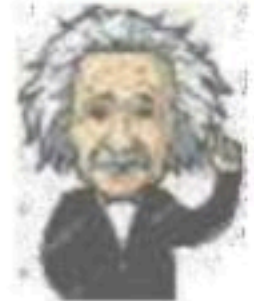
- 1- 118
- 2- Number of protons
- 3- b & c are correct
- 4- less than its density in liquid state
- 5- All the previous (Golden frog is cancelled)

True or false

- 1- Cancelled
- 2- False
- 3- True
- 4- True
- 5- False

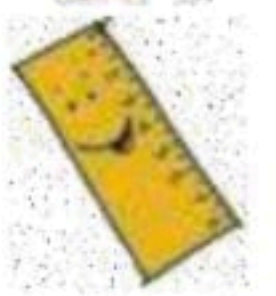
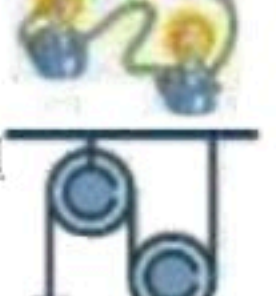
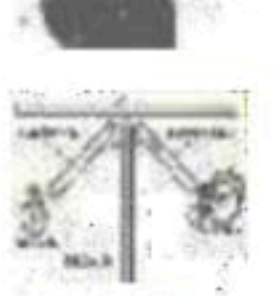
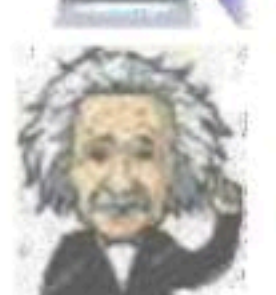
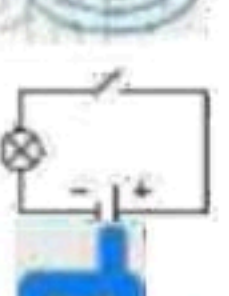
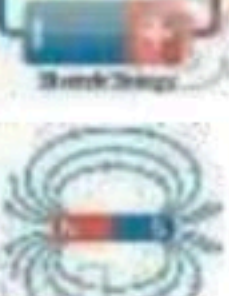
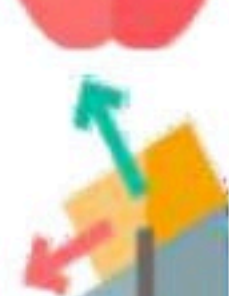
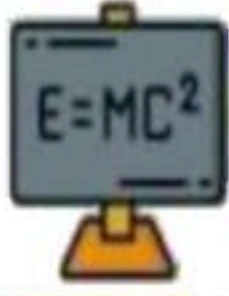
Write the scientific term

- 1- Troposphere
- 2- Fossils
- 3- Semimetals (Metalloids)
- 4- Ion
- 5- Hydrogen bond





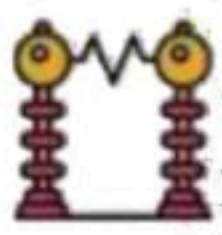
General exercises (3)



A) Choose the correct answer from the following:

- 1 In the periodic table, the elements which are identical in properties lie in the same:
 - a- Period
 - b- Group
 - c- Nucleus
 - d- Energy level.
- 2 The scientist who left vacancies in his table to be filled with suitable discovered elements in future is:
 - a- Mosely
 - b- Newlander
 - c- Bohr
 - d- Mendeleev.
- 3 The block which contains the groups 1A, 2A in the periodic table is:
 - a- s
 - b- p
 - c- d
 - d- f
- 4 The elements which occupy the middle block (d) in the periodic table is elements.
 - a- alkali
 - b- alkaline earth
 - c- transition
 - d- inert
- 5 The scientist who discovered the main energy levels is:
 - a- Mendeleev
 - b- Bohr
 - c- Moseley
 - d- Rutherford
- 6 Which of the following belongs to the same group in the periodic table?
 - a- Na, C
 - b- Na, Li
 - c- Na, Cu
 - d- Na, Ne
- 7 The scientist who discovered that the nucleus of the atom contains positively charged particles is:
 - a- Mendeleev
 - b- Moseley
 - c- Rutherford
 - d- Bohr
- 8 The element which its atomic number (18) is :
 - a- Transitional element
 - b- Inert gas
 - c- Metallic element
 - d- Halogen element
- 9 The element which its atomic number is (17) is similar in its chemical construction to the element which its atomic number is:
 - a- 2
 - b- 7
 - c- 9
 - d- 19
- 10 The 3rd period starts with elements their oxides are as following:
 - a- Acidic, amphoteric then basic
 - b- Acidic, basic then amphoteric
 - c- Basic, acidic then amphoteric
 - d- Basic, amphoteric then acidic
- 11 Metal oxides are oxides.
 - a- acidic
 - b- basic
 - c- amphoteric
 - d- neutral





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12 The elements of 1st group are known as:

- a- Halogens b- Inert gas c- Alkalines d- alkaline earth



13 The hydrogen element belongs to:

- a- Group 1A b- Group 2A c- Group 7A d- Group 6A



14 The strongest alkaline earth metal in reaction with water is

- a- magnesium b- calcium c- barium d- sodium



15 The hottest atmospheric layer is:

- a- troposphere b- stratosphere
c- mesosphere d- thermosphere



16 The coldest atmospheric layer is:

- a- troposphere b- stratosphere
c- mesosphere d- thermosphere



17 The planes fly in the layer.

- a- troposphere b- stratosphere
c- mesosphere d- thermosphere



18 The device used in measuring the atmospheric pressure is:

- a- Altimeter b- Aneroid c- Barometer d- a and b



19 layer extends from the sea level to the tropopause.

- a- Troposphere b- Stratosphere
c- Mesosphere d- Thermosphere



20 The device used in measuring the altitude from the earth surface is.....

- a- the altimeter b- Ancroid c- Barometer d- a and b



21 The layer extends from the tropopause to the stratosphere.

- a- troposphere b- stratosphere
c- mesosphere d- thermosphere



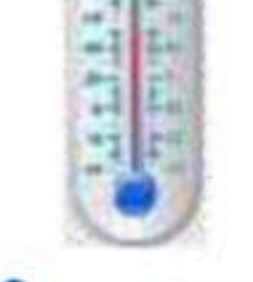
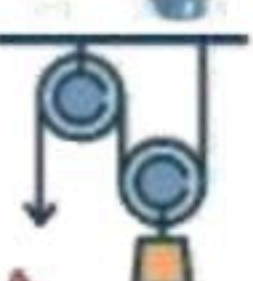
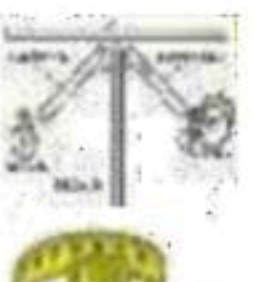
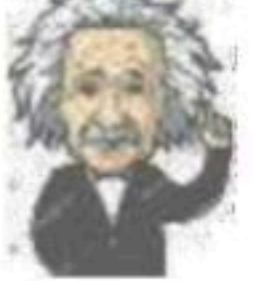
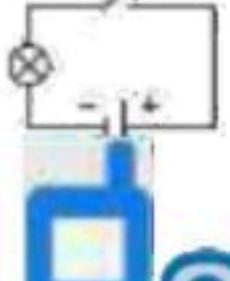
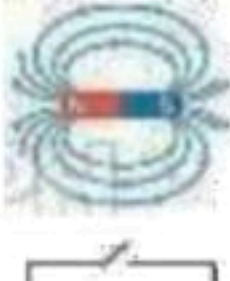
22 The charged cosmic radiations are dispersed in the layer.

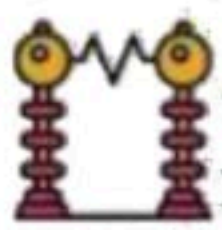
- a- troposphere b- stratosphere c- mesosphere d- ionosphere



23 The layer extends from the stratopause to the mesopause.

- a- troposphere b- stratosphere
c- mesosphere d- thermosphere





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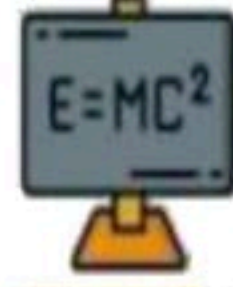
24 The..... is much vacuumed layer.

a- troposphere

b- stratosphere

c- mesosphere

d- thermosphere



25 The temperature decreases by at 2 Km above earth surface.

a- 6.5°C

b- 13°C

c- 5.6°C

d- 9.75°C



26 The atmospheric pressure is the of an air column per a unit area.

a- mass

b- volume

c- weight

d- density



27 Meteors are burnt in the layer

a- troposphere

b- stratosphere

c- mesosphere

d- thermosphere



28 The ionosphere is located in the upper part of the layer.

a- troposphere

b- stratosphere

c- mesosphere

d- thermosphere



29 The air moves in the stratosphere layer.

a- horizontally

b- vertically

c- vortical

d- no correct answer



30 The ionosphere is surrounded by two..... belts.

a- magnetic

b- electrical

c- ionic

d- thermal



31 The atmospheric pressure on the top of a mountain the atmospheric pressure at the sea level.

a- is greater than

b- is less than

c- equals

d- equals half of



32 The standard atmospheric pressure at the sea level is Millibar.

a- 76

b- 1000

c- 1013.25

d- 1300



33 The..... is considered the 1st atmospheric layer of the atmospheric layers.

a- troposphere

b- stratosphere

c- mesosphere

d- thermosphere



34 The is considered the 2nd atmospheric layer of the atmospheric layers.

a- troposphere

b- stratosphere

c- mesosphere

d- thermosphere



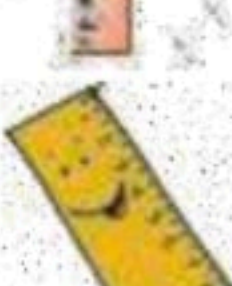
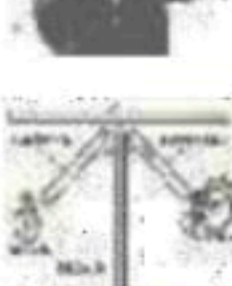
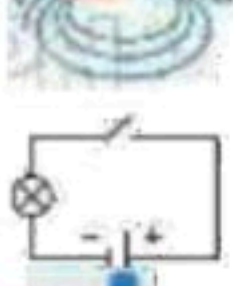
35 The Ozone layer is in the.....

a- troposphere

b- stratosphere

c- mesosphere

11 d- thermosphere



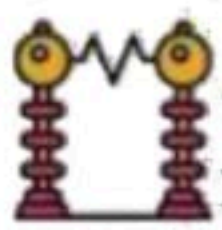
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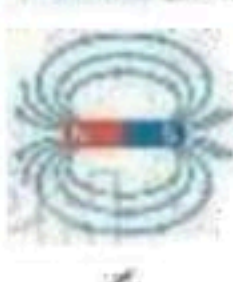
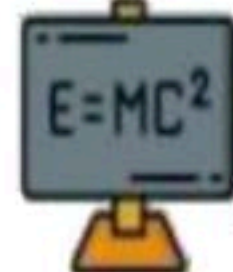
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36 The ozone molecule consists of

- a- four oxygen atoms
- b- two oxygen atoms
- c- three oxygen atoms
- d- one oxygen atom

37 The ozone layer absorbs

- a- Infrared rays
- b- ultraviolet rays
- c- X-rays
- d- light rays

38 The ozone hole appears over

- a- the North Pole
- b- the South Pole
- c- the Middle East
- d- the Equator

39 The is used in extinguish fires.

- a- methyl bromide gas
- b- halons
- c- nitrogen oxide
- d- ultraviolet rays

40 The CFCs compounds break down under the effect of ultraviolet rays to release atoms.

- a- carbon
- b- chloride
- c- oxygen
- d- Freon

41 element is considered as the main component of ozone.

- a- Nitrogen
- b- Oxygen O_2
- c- Hydrogen
- d- All the previous

42 The ozone layer doesn't allow the passage of ultraviolet rays.

- a- far
- b- medium
- c- a&b together
- d- near

43 are considered to have a large thermal effect.

- a- Infrared rays
- b- Ultraviolet rays
- c- Visible rays
- d- All the above

44 The ozone hole increases in of each year.

- a- October
- b- September
- c- December
- d- January

45 is used as a coolant in cooling devices.

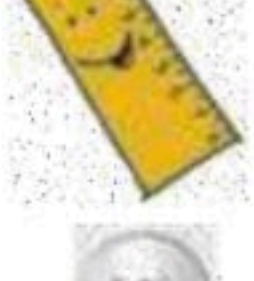
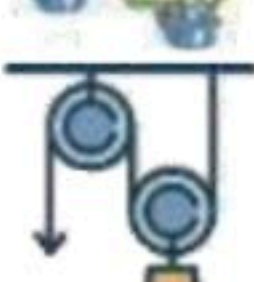
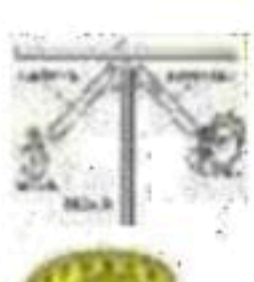
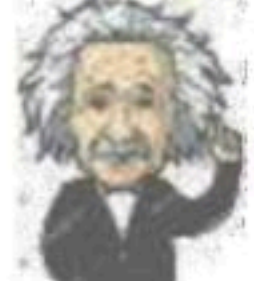
- a- Methyl bromide gas
- b- Halons
- c- Nitrogen oxide
- d- Freon

46 is used as an insecticide to preserve stored agricultural crops.

- a- Methyl bromide gas
- b- Halons
- c- Nitrogen oxide
- d- Freon

47 results from the burning fuel of ultrasound airplanes (Concord).

- a- Methyl bromide gas
- b- Halons
- c- Nitrogen oxide
- d- Freon





48 From the negative effects of global warming is.....

- a- Melting of ice at the north and south pole.
- b- Severe climatic changes.
- c- The lack of ozone gas in the atmospheric envelope.
- d- a&b together.

49 Global warming happens because of:

- a- The lack of CO₂ in the atmospheric envelope.
- b- The increase of the amount of CO₂ in the atmospheric envelope.
- c- The lack of plants on earth.
- d- b&c together.

50 The ozone is measured in a unit called

- a- millibar b- Km c- C° d- dopson

51 The increase of CO₂ percentage is caused by

- a- cutting trees b- burning forests
- c- burning fossil fuel d- all the above

52 Melting of ice in the north and south pole lead to the extinction of polar animals like.....

- a- crocodiles b- deers c- monkeys d- polar bears

53 Which of the following terms is more precise in describing the remains and traces of old living organisms preserved in sedimentary rocks?

- a- Extinction b- The red list c- Fossils d- Solidification

54 To have a fossil of any organism, what do you expect to be available to it?

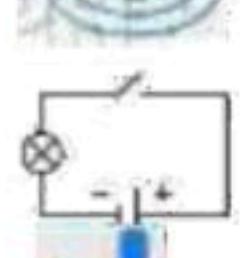
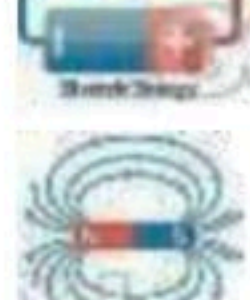
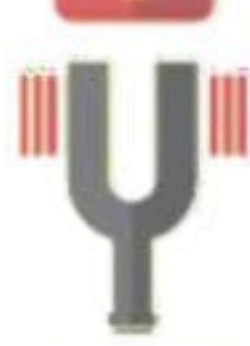
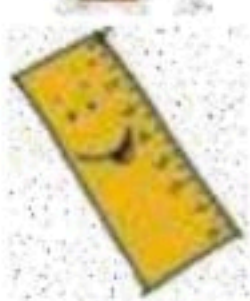
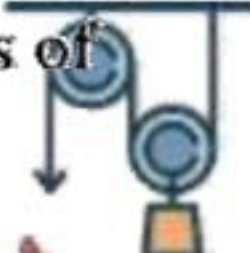
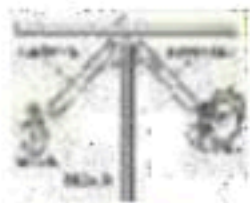
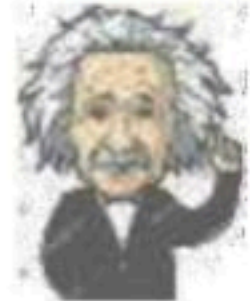
- a- A hard skeleton. b- A medium to protect it from decomposition.
- c- Fast burial after death. d- All the above.

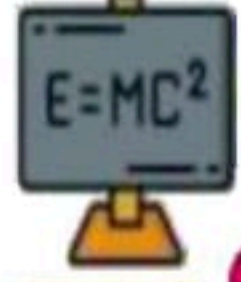
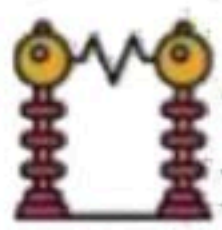
55 On the solidification of the resinous matter secreted by pine trees in the old geological periods it forms

- a- fossil of a complete body b- amber fossil
- c- trilobite fossil d- nummulites fossil

56 Is the cake considered as mold?

- a- Yes, because it holds the same external details from the mold.
- b- Yes, because it holds the same inner details from the mold.
- c- No, because it holds the same inner and external details from the mold.
- d- No, because it doesn't hold any details from the mold.





57 If you were a collector of snail and clam shells from the sea beach, which one would be suitable to make a cast fossil?

- a- Only the ammonite shell.
- b- Only the clam shell.
- c- The shell of ammonite and clam.
- d- None of them.

58 Worms' tunnels fossil is formed because of

- a- the presence of hard skeleton.
- b- the activity of worms during its life.
- c- the death of the worms and its fast burial in sedimentary rocks.
- d- the death of the worms and its fast burial in snow layers.

59 What's the kind of fossil formed when a plant leaf falls on a sedimentary rock in the beginning of its formation then it solidifies?

- a- Trace.
- b- Cast.
- c- Mold.
- d- Petrified fossil.

60 Is the dinosaur's eggs an example for petrified fossils?

- a- Yes, because minerals replaced its organic material part by part.
- b- Yes, because it holds the inner details of the eggs.
- c- No, because it is not considered as a fossil.
- d- No, because it doesn't indicate the remains of dinosaur after its death.

61 What happened when silica replaced the wood of the trees' stems and trunks which are older than 35 million years?

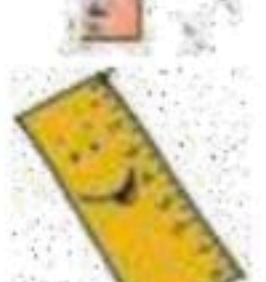
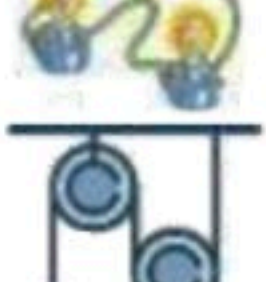
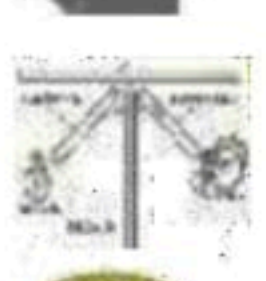
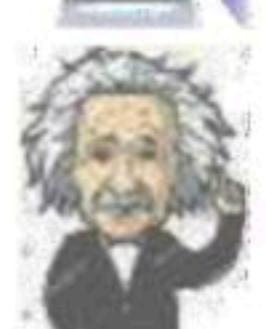
- a- A complete body fossil has been formed.
- b- A petrified fossil has been formed.
- c- A trilobite has been formed.
- d- A dinosaur tooth fossil has been formed.

62 Not all the fossils are considered index fossils and that is because they are characterized by

- a- long range of time and limited geographical range
- b- short range of time and wide geographical range
- c- long range of time and wide geographical range
- d- short range of time and limited geographical range

63 Which of the following fossils indicates that the environment they were formed in was a hot and rainy tropical environment?

- a- Nummulites.
- b- Ferns.
- c- Coral.
- d- Archaeopteryx.





- 64 The fossil record points to the life evolution in plants from simple to complicated higher forms, and the evidence for that is.....

a- angiosperms preceded gymnosperms
b- ferns preceded mosses
c- algae preceded mosses and ferns
d. mosses preceded ferns

- 65 Which of the following fossils play an important role in petroleum exploration?

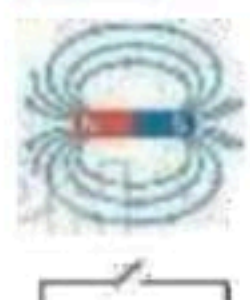
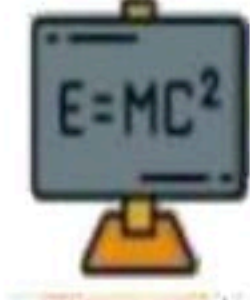
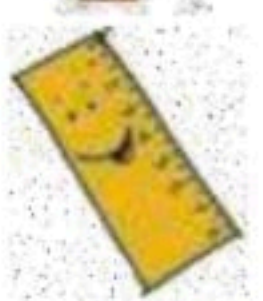
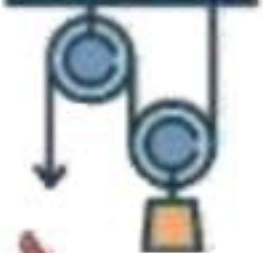
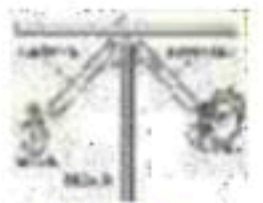
a- Foraminifera and radiolaria.
b- Nummulites and ammonites.
c- Foraminifera and trilobite.
d- Radiolaria and nummulites.

- 66 Which of the following statements is more precise in describing the concept of extinction?

a- The date of death of the last one of the same species.
b- The continuous decrease in the numbers of individuals of the same species without compensation.
c- Everything involves the living organisms and non-living organisms in some environment.
d- The path that energy takes when transported from a living organism to another living organism in the environmental system.

B) Complete the following sentences:

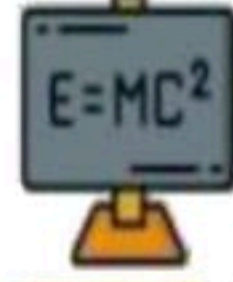
- 1 The two scientists and made modifications on Mendeleev's table.
- 2 Moseley put and series below the periodic table.
- 3 The d-block contains elements.
- 4 The transitional elements starts from period in the modern periodic table.
- 5 The modern periodic table consists of horizontal periods, vertical groups.
- 6 By increasing the atomic number, the value of mass numbers will.....in the periods of the periodic table.
- 7 By increasing the atomic number, the value of electronegativity in the groups of the periodic table.
- 8 Each period in the modern periodic table starts with elements and ends with elements.





9 The strongest non-metal elements are in the group.

10 The thickness of troposphere is about



11 As we go up 1 km above the sea level the temperature with

12 The atmospheric pressure at sea level equals millibar.



13 The aneroid is used to

14 The stratosphere extends with thickness equals Km.



15 On the formation of ozone layer the oxygen molecule absorbs which breaks the bond between to make each atom bonds with forming the ozone molecule.



16 The ultraviolet rays are three kinds and.....

17 From the harmful effects of far and medium ultraviolet rays on human are and.....



18 From the harmful effects of far and medium ultraviolet rays on amphibians are..... and.....



19 From the harmful effects of far and medium ultraviolet rays on marine organisms are..... and.....



20 From the harmful effects of far and medium ultraviolet rays on earth plants are and.....

21 The ozone gas is formed in two steps:

a) Breaking the bond of the molecule on absorbing ultraviolet rays converting in to two atoms of

b) The bonding of each free oxygen atom with forming ozone molecule.



22, and..... are considered from ozone layer pollutants.



23 is used as insecticide to preserve the agriculture storage.



24 When the density of green house gases increases in the earth's atmospheric envelope it allows the passage of and

25 and..... are from Montreal Protocol commandments.

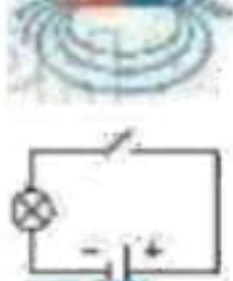


26 The global warming phenomenon means

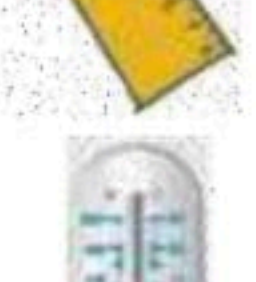
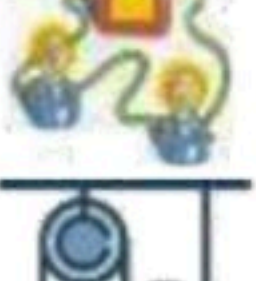
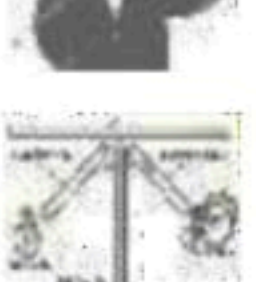
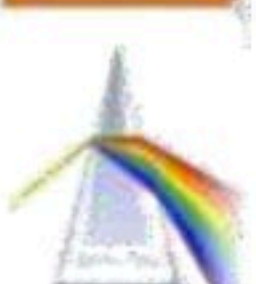
27 The nanometer equals meter.

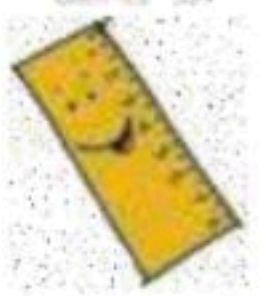
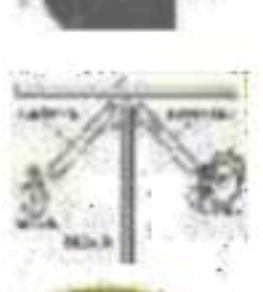
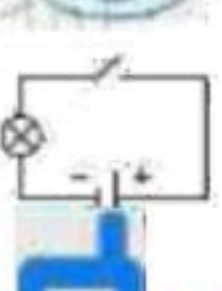


28 The glass permits the passage of and rays coming from the sun to be absorbed by earth in the green house.



29 The lights in Eiffel tower, light and sound project in Abu Simbel temple Aswan and other monuments are turned off in the day.





30 The fossil is the trace and remaining of living organisms preserved in

31 The fossils types differ according to their way of

32 The suitable medium to form a mammoth fossil is

33 To have a complete body fossil it must be buried as soon as it is dead in a medium protects it from

34 The mammoth fossil was discovered in the beginning of the century and it was still keeping its

35 Resinous is secreted from which were common during some geological periods.

36 When the snail's shell decomposes it will leave which carries the internal details of the snail.

37 By studying the fossil record it shows that started first in then established on

38 The presence of fossils like radiolarian and foraminifera in the exploration wells' rocks indicates the of these rocks and the suitable conditions to form

39 Extinction is the continuous decrease in of species of living organisms without until all the individuals of the species.....

40 The fossils present in areas and known as indicate the extinction of species once was living organisms and most of them have then before the creation of human.

41 Removing forests leads to and

42 The demanding for many people on fur and skin of animals led to the of hundreds of kinds of and

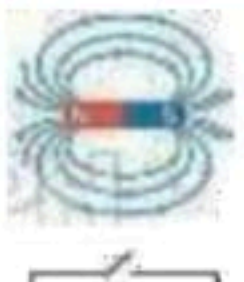
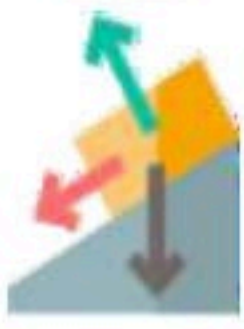
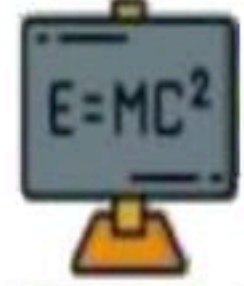
43 Complete the following table:

Atmospheric layer	Its order	Its thickness	Its content
1-	3 rd
2-The stratosphere
3-.....	590km

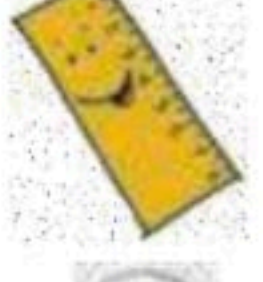
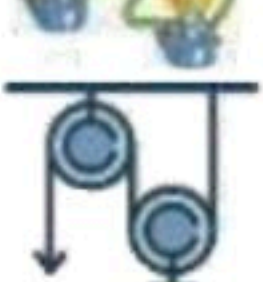
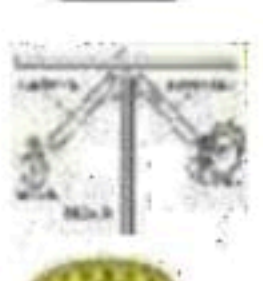
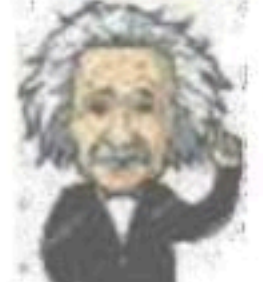
C) Put (✓) in front of the right statement and (X) in front of the wrong one with righting the wrong:

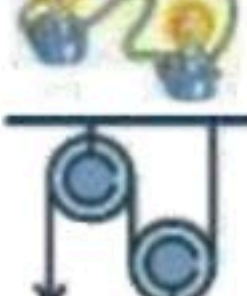
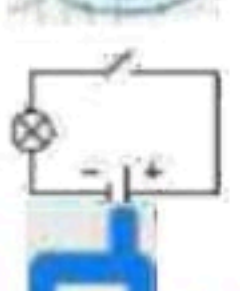
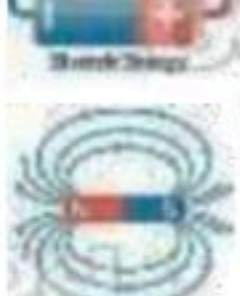
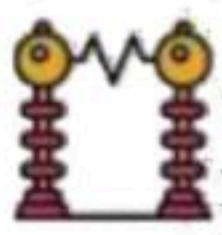
1 The chemical elements have been categorized in a table to ease its studying.





- 2 The elements with the same physical and chemical properties has been put in horizontal periods.
- 3 Mendeleev arranged the elements descendingly according to their mass.
- 4 Mendeleev put more than element in the same place like nickel and cobalt.
- 5 Rutherford discovered that the nucleus contains +ve charged protons.
- 6 The atomic number of every element increases by one over the element that precedes it in the same period.
- 7 Bohr had discovered the main energy levels.
- 8 The transitional elements groups are symbolized by (d).
- 9 The number of known elements till now is 92 element.
- 10 The atomic size decreases in periods as the atomic number increases.
- 11 In water molecule the oxygen element has more affinity to attract the bonding electrons than the hydrogen element.
- 12 The covalent bond becomes ionic when the difference in electro negativity between the bonded atoms = zero.
- 13 It is easy to identify the semi-metals from their electronic structure.
- 14 Each period starts with a weak metal.
- 15 The metallic property in group (1A) increase as we go from up to down in the group.
- 16 50% of the mass of the atmospheric envelope is in some area in between the sea level and a 3 Km elevation.
- 17 The troposphere is the 1st layer in the atmospheric envelope.
- 18 All the atmospheric phenomena like rain, wind and clouds occur in the ionosphere.
- 19 The satellites revolve around the earth in a region called the exosphere.
- 20 The standard atmospheric pressure at sea level equals 76 millibar.
- 21 The temperature in the troposphere decrease at a rate of 6.5 degree each 1 Km up.
- 22 The ionosphere is surrounded by Van Allen's belt which is responsible for scattering the harmful cosmic rays away from earth.
- 23 The stratosphere is the 3rd layer in the atmospheric envelope.
- 24 The air moves horizontally in the bottom part of the stratosphere.
- 25 The troposphere contains most of the atmospheric envelope.
- 26 The altimeter is used to determine the elevation of airplanes from the sea level.



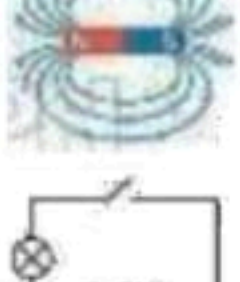
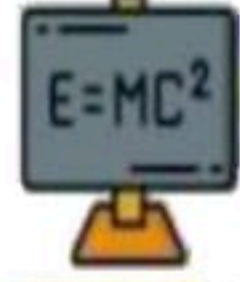


- 27 The Aurora phenomenon appears as colored light curtains at the north and south poles.
- 28 The pilots prefer to fly their airplanes in the upper layer of the mesosphere.
- 29 The air moves vertically in the stratosphere.
- 30 The ozone layer is in the stratosphere.
- 31 The millibar is the unit of measuring the ozone degree.
- 32 The increase of carbon dioxide percentage in the atmospheric envelope leads to the increase in temperature.
- 33 Lacking of plants on earth leads to the increase in temperature.
- 34 The extinction of some polar animals is from the negative effects of global warming phenomenon.
- 35 The ozone layer allows the passage of all ultraviolet rays near and medium.
- 36 The ozone layer acts as a protective shield for the living organisms.
- 37 The halons are produced from the burning of supersonic airplanes fuel.
- 38 The world celebrates the ozone day in december of each year.
- 39 Methyl bromide is used in extinguishing fires.
- 40 Nitrogen oxides results from fuel burning.
- 41 The ozone layer erosion differs every year.
- 42 The methane gas and nitrous oxide are considered from the green house gases.
- 43 The ozone molecule is formed by bonding three free oxygen atoms together.
- 44 The ozone layer lies at altitude from 20-30 Km.
- 45 The far and medium ultraviolet rays cause skin cancer and cataract to humans.
- 46 The Freon is used as a coolant in cooling devices.
- 47 Methyl bromide is used as an insecticide.
- 48 The ultraviolet rays break chlorofluorocarbon compounds to release active chlorine atoms.
- 49 From the negative effects of climatic changes the happening of tropical hurricanes, destructive floods, drought waves and forests fires.

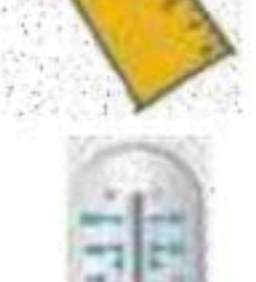
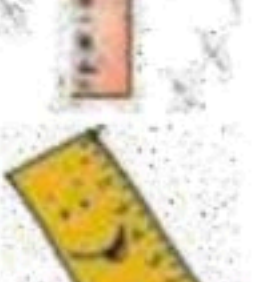
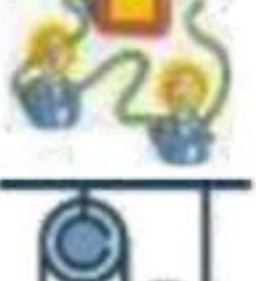
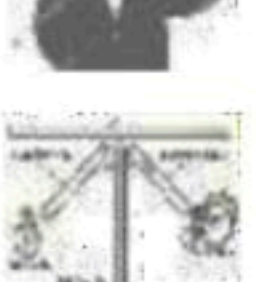
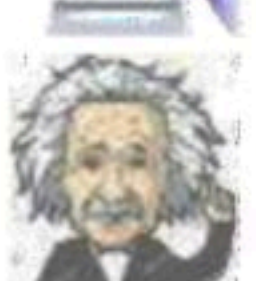
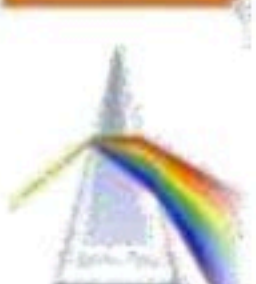
D) Correct the underlined word(s):

- 1 The elements in Mendeleev's table are arranged according to the increase of atomic number.
- 2 Rutherford discovered the main energy levels.





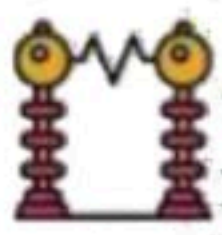
- 3 The elements were arranged in Moseley's table according to the way the energy sublevels were filled.
- 4 The electronegativity values increase in the groups as the atomic number increases.
- 5 Each period ends with a non-metal.
- 6 The strongest non-metal element occurs in the 1st group (1A).
- 7 Non-metal oxides are considered basic oxides.
- 8 The elements of the 1st group (1A) are known as basic earth metals.
- 9 The archaeopteryx fossil is a kind of extinct elephants.
- 10 The resinous matter protects the insects inside it from decomposing.
- 11 The mold is a copy of the outer shape of the shell.
- 12 The trace is what the living organism leave after its death in the sedimentary rocks.
- 13 The clam shell decomposes after the mineral sediments fill its bores leaving a rock mold of the inner surface details.
- 14 Petrified wood is considered from rocks.
- 15 The nummulites fossil is used for indicating the age of sedimentary rock.
- 16 The ammonite fossil indicates that the environment it lived in was warm, clear and shallow seas.
- 17 The ferns indicate that the environment it lived in was a sea floor.
- 18 The desert environment contained almost third of the living organisms on land.
- 19 The Quagga is the most famous extinct kinds in the old times.
- 20 The dinosaurs are the most famous extinct kinds recently.
- 21 The passenger pigeon is from the birds that can't fly because of its small wings.
- 22 The red list contains about 5 thousands extinct kind in year 2008.
- 23 The environmental systems are safe places which are specified to protect the endangered species in their natural environments.



E- Write the scientific term indicated by the following statements:

- 1 The ascending order of the elements according to their atomic mass.
- 2 The ascending order of the elements according to their atomic number.
- 3 The horizontal rows in Mendeleev's table.
- 4 The vertical columns in Mendeleev's table.
- 5 Indicated by the letters K, L, M, N, O.

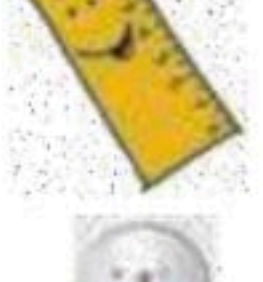
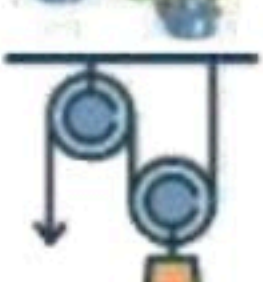
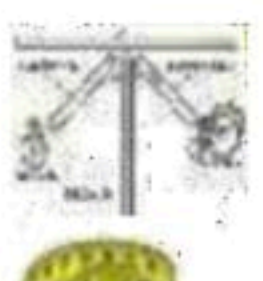
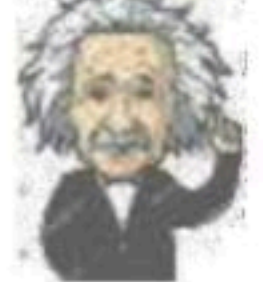
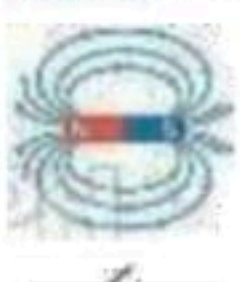
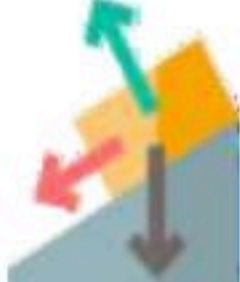
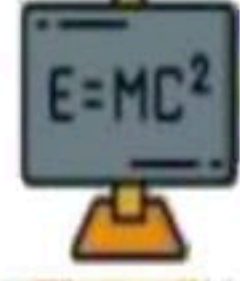




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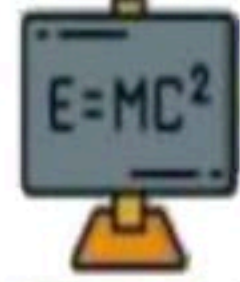


- 6 Indicated by the letters s, p, d, f.
- 7 A kind of elements symbolized by letter (B).
- 8 The block that contains the groups from 3A to 6A.
- 9 The block that contains the series of luthanides and actinides.
- 10 The ability of the atom in the covalent molecule to attract the chemical bond electron to it.
- 11 A kind of oxides reacts as basic oxides or acidic oxides according to the reaction condition.
- 12 A kind of elements in which their valency electrons contain less than 4 electrons.
- 13 A kind of elements in which their valency electrons contain more than 4 electrons.
- 14 A group contains the strongest non-metals.
- 15 The block that contains the groups from 3A to 7A.
- 16 A region between mesosphere and thermosphere.
- 17 The 4th layer of the atmospheric envelope.
- 18 A device used to measure the altitude from earth's surface.
- 19 A layer of the atmospheric envelope in which air moves vertically.
- 20 Two magnetic belts help in dispersing the harmful cosmic radiation away from the earth.
- 21 A phenomenon looks like a colorful light curtains seen in the two poles.
- 22 The atmospheric envelope layer that contains a certain amount of helium and hydrogen gases only.
- 23 The region where the atmospheric envelope merges with the outer space.
- 24 A phenomenon that increases the percentage of carbon dioxide and leads to an increase in temperature.
- 25 A kind of gases formed in the stratosphere.
- 26 The gas resulting from the reaction of a chlorine atom with ozone gas.
- 27 A kind of rays causes the rising of temperature in the stratosphere layer.
- 28 The traces and remains of the old living organisms which are preserved in the sedimentary rocks.
- 29 The traces that indicate the activity of the living organisms during their life.
- 30 The traces that indicate the remains of the old living organisms after their death.
- 31 The process of conversion of the parts of old living organisms in to solidified materials as a result of replacing the organic material of the organism with minerals.





32 Fossils of living organisms lived for a short period of time and in a wide geographical range.



33 The fossils present in the rocks of different regions and they indicate the evolution and extinction of living organisms.



34 The continuous decrease in numbers of individuals from the same species of living organisms without compensation with birthing.



35 Hunting wild animals with a random unorganized way which exposes it to extinction.



36 The path which the energy takes when transporting from a living organism to another one inside the environmental system.



37 The environmental system that is affected severely by the absence of one species of the living organisms that live in it.



38 The environmental system that is not affected severely by the absence of one species of the living organisms that live in it.



39 Safe places that are specified to protect the endangered species in their natural environment.

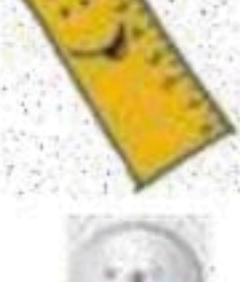
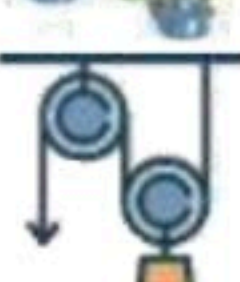
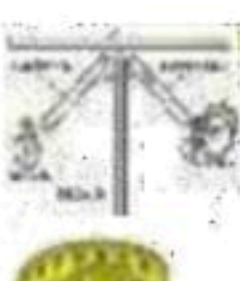
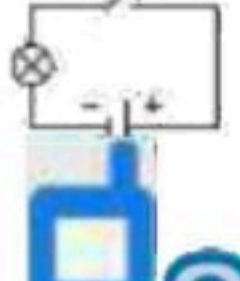
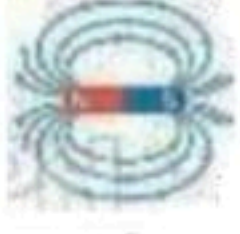


H) Coupling question:

Match to (A) what is suitable from (B).

1-

Column (A)	Column (B)
1- Altimeter	a- A device used to determine today's weather.
2- Aneroid	b- A suitable layer for air-planes flying.
3- Troposphere	c- A device used to measure the altitude of planes.
4- Stratosphere	d- The hottest layer in the atmospheric envelope.
5- Thermosphere	e- The layer that has all the weather phenomena.
6- Mesosphere	f- The coolest layer in the atmospheric envelope.



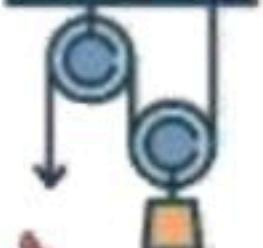
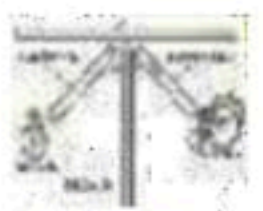


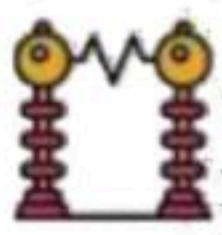
2-

Column (A)	Column (B)
1- A fossil that indicates the life details of an old plant is	a- Radiolaria.
2- A fossil that indicate the suitable conditions of formation of petroleum is	b- Archaeopteryx.
3- A fossil that is considered the link between the reptiles and birds is	c- Amber.
4- An invertebrate fossil preceded the vertebrates in life is	d- Petrified wood.
	e- Dinosaur.

3-

Column (A)	Column (B)
1- The process of converting the part of living organism to petrified materials is	a- Fossil record.
2- The fossils which are in the rocks of different regions and indicate the extinction and evolution of living organisms are	b- Petrification.
3- One of the most important factors of extinction in the modern age is	c- Protectorates.
4- A list contains the endangered species and their categorization according to the danger degree is	d- Natural disasters.
	e- Red list.

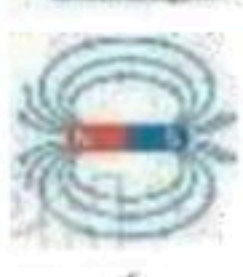
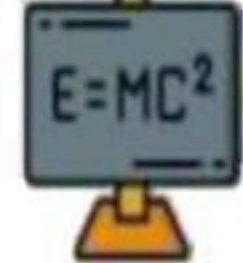
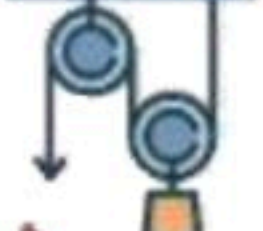
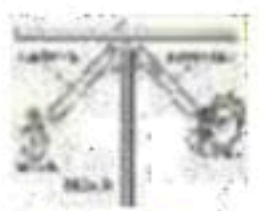


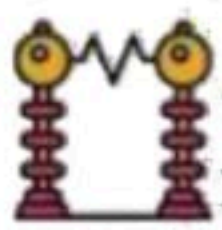


Essay Questions:

A) Give reasons for:

- 1 Fluorine is considered from the strongest non-metallic elements.
- 2 Cesium is considered from the strongest metallic elements.
- 3 Sulphur dioxide is considered as acidic oxide.
- 4 Barium oxide is considered as basic oxide.
- 5 Aluminum oxide is considered an amphoteric oxide.
- 6 By increasing the atomic number of the elements their atomic weight decreases.
- 7 Starch (NH_3) is considered as ionic-covalent compound.
- 8 It is hard to identify the properties of metalloids from their electronic structure.
- 9 Rain, clouds and winds are in the troposphere.
- 10 The ionosphere is very important to radio stations.
- 11 The occurrence of the aurora phenomenon.
- 12 The upper part of the thermosphere is called ionosphere.
- 13 The temperature increase as we go higher in the stratosphere layer.
- 14 The continuity of ozone layer erosion.
- 15 The ozone layer acts as a protective shield for the living organisms.
- 16 The increase of the carbon dioxide percentage in the atmospheric envelope.
- 17 The trading or producing CFCs compounds is prohibited.
- 18 The petrified wood is considered from fossils in spite of their resemblance to rocks.
- 19 The amber is considered as suitable medium to form a complete body fossil.
- 20 The danger of removing the tropical forests on the life of living organisms.
- 21 The desert ecosystem is affected when one species is absent.
- 22 The danger of overhunting on wild animals.
- 23 The farmers hunt the Tasmanian cat.
- 24 The dodo bird is an easy target to hunt.
- 25 The rhinoceros is considered as endangered species.
- 26 Some nation governments are concerned by establishing natural protectorate areas.
- 27 The UNESCO choose Waadi Hetan region to be a world heritage region.





B) What happens in the following situation?

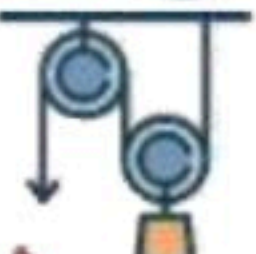
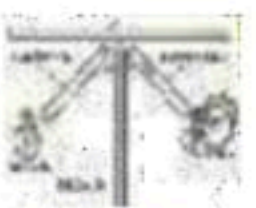
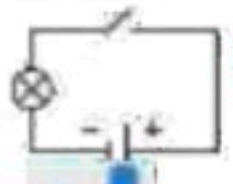
- 1 Put a magnesium strip inside a test tube contains oxygen.
- 2 Adding the purple sun flower solution to magnesium hydroxide.
- 3 Adding the purple sun flower solution to a jar has a piece of burning coal.
- 4 Dissolving magnesium hydroxide in water.
- 5 The absence of electro negativity difference between the hydrogen atom and oxygen atom in water molecule.
- 6 The drop of water temperature to 4 °C.
- 7 The decrease of the value of the water's latent heat.
- 8 The breaking of water in to its two elements by heating.
- 9 The passage of electric current through a Hoffman voltmeter containing acidic water.
- 10 Throwing synthetic cleaning substances in water.
- 11 To dipping of old insects in amber.
- 12 The solidification of the mineral sediments inside the ammonite then the decomposition of its shell.
- 13 Putting the clam's shell on the surface of a planned piece of clay then pressing it gently.
- 14 The continuous evolution in manufacturing hunting weapons.
- 15 Hunting the passenger pigeon in great numbers.
- 16 Extinction of a species from a balanced ecosystem.
- 17 The falling of acidic rain on the trees of forests.
- 18 The low rate of reproduction of the passenger pigeon.

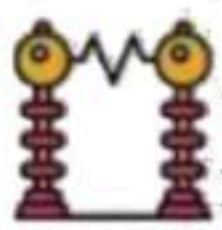
C) Compare between the following:

- 1 Alkalies and earth alkalines.
- 2 The group and the period in the periodic table.
- 3 The property of atomic volume and the property of electro negativity in the periodic table (in view of definition).
- 4 Altimeter and aneroid (in the view of their usage).
- 5 The troposphere layer and ionosphere layer (in the view of pressure and temperature).
- 6 The mesosphere layer and the thermosphere layer (in the view of pressure and temperature).
- 7 The atmospheric pressure and atmospheric envelope (in the view of definition).

D) Mention one difference between the following:

- 1 The cast and trace.





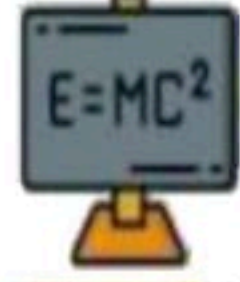
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- 2 The mammoth and amber fossils.
- 3 Ferns and coral fossils.
- 4 The nummulite and foraminifera fossils.
- 5 The simple ecosystem and the complicated ecosystem.
- 6 The benefits of Ras Mohamed protectorate and Waadi Hetan region.



E) What is meant by each of the following?

- | | |
|--|-----------------------|
| 1- Montreal protocol. | 13- The nanometer. |
| 2- CFCs compounds. | 14- Fossil. |
| 3- IPCC. | 15- Index fossil. |
| 4- Global warming. | 16- Extinction. |
| 5- STP. | 17- Petrification. |
| 6- Ozone hole. | 18- Red list. |
| 7- Dopson. | 19- The trace. |
| 8- NON-CFC. | 20- The mold. |
| 9- Green house gases. | 21- IUCN. |
| 10- Energy saving lamps. | 22- Fossil record. |
| 11- Green house phenomenon. | 23- Petrified fossil. |
| 12- Standard pressure and temperature. | |



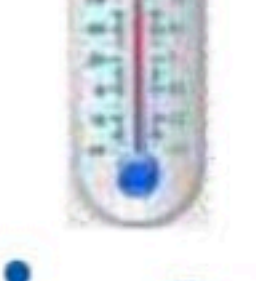
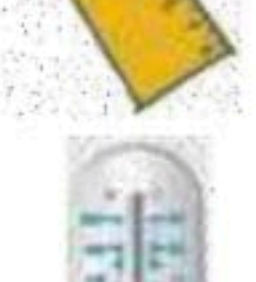
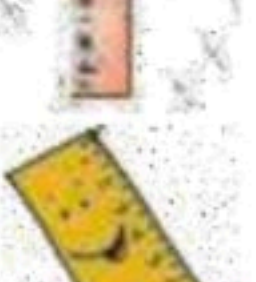
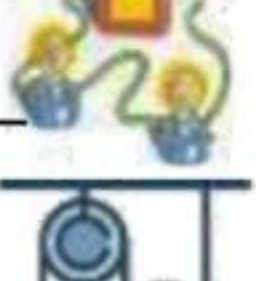
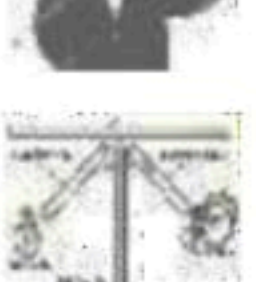
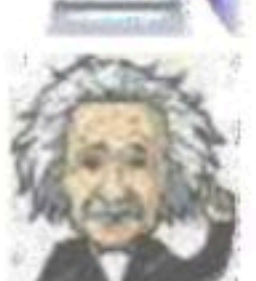
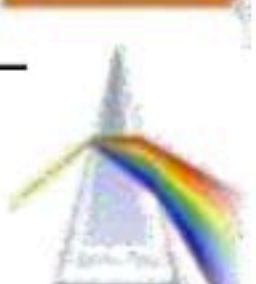
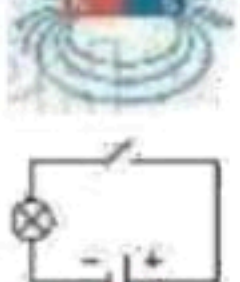
F) What is the importance of?

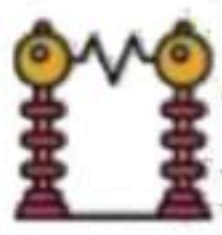
- | | |
|-------------------------------|----------------------|
| 1- The two Van Allen's belts. | 2- Ozone layer. |
| 3- Altimeter. | 4- Troposphere. |
| 5- Ionosphere. | 6- Exosphere region. |
| 7- Satellites. | 8- Aneroid. |
| 9- Mesosphere. | |



G) Mention one example for:

- | | |
|-------------------------------------|-------------------------------------|
| 1- The trace. | 2- A solid mold. |
| 3- The cast. | 4- Fossil of complete body. |
| 5- Petrified fossil. | 6- Microscopic fossil. |
| 7- Endangered bird. | 8- Endangered plant. |
| 9- Extinct bird. | 10- Bird habitats in north America. |
| 11- Animal habitats bamboo forests. | |



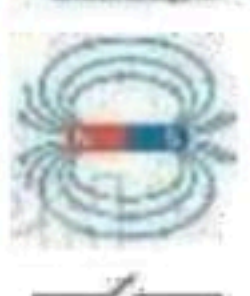
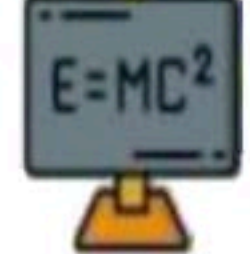
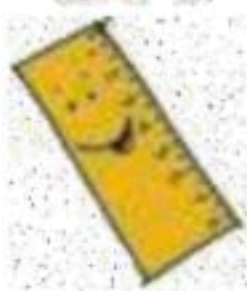
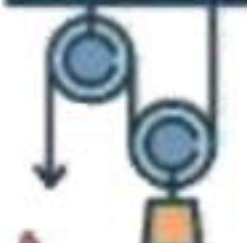
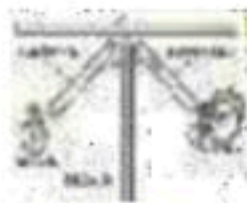
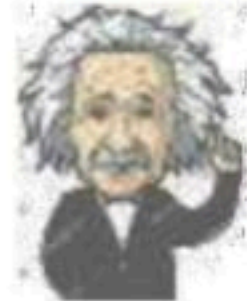


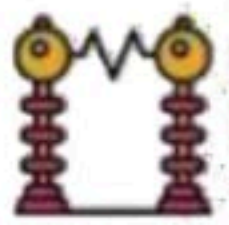
Model Answer

Choose

A)

- 1- Group 2- Mendeleev 3- s 4- transition 5- Bohr
- 6- Na, Li 7- Rutherford 8- Inert gas 9- q
- 10- Basic, Amphoteric then Acidic 11- basic 12- Alkali metals
- 13- Group 1A 14- Cancelled 15- thermosphere 16- mesosphere
- 17- Stratosphere 18- Barometer 19- Troposphere 20- the altimeter
- 21- stratosphere 22- ionosphere 23- mesosphere 24- mesosphere
- 25- 13°C 26- weight 27- mesosphere 28- thermosphere
- 29- horizontally 30- magnetic 31- is less than 32- 1013.25
- 33- troposphere 34- stratosphere 35- stratosphere
- 36- three oxygen atoms 37- ultraviolet rays
- 38- the south pole 39- halons 40- cancelled
- 41- Oxygen O_2 42- a&b together 43- Infrared rays
- 44- September 45- Freon 46- Methyl bromide gas
- 47- Nitrogen Oxide 48- a&b together 49- b&c together
- 50- Dobson 51- all the above 52- polar bears 53-
- Fossils 54- all the above 55- amber fossil
- 56- yes, because it holds the same inner details from the mold
- 57- the shell of ammonite and clam
- 58- the activity of worms during its life 59- cast
- 60- yes, because minerals replaced its organic material part by part.
- 61- a petrified fossil has been formed
- 62- short range of time and wide geographical range
- 63- ferns 64- algae preceded mosses and ferns
- 65- Foraminifera and radiolaria
- 66- The continuous decrease in the numbers of individuals of the same species without compensation.





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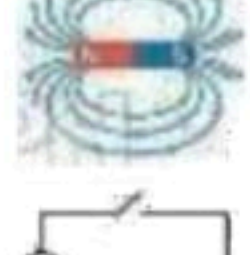
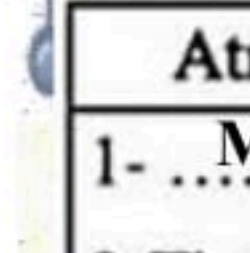
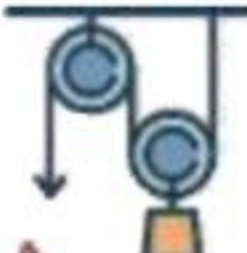
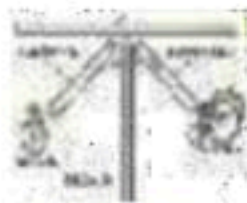
Final Revision

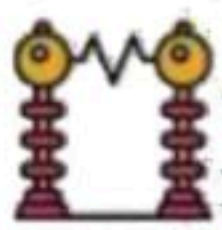
Complete

B)

- 1- Mosely and Bohr 2- lanthanides and actinides 3- transition
- 4- fourth 5- 7 - 18 6- increase 7- cancelled
- 8- metal - inert gas 9- 7A 10- 13 Km 11- decrease - 6.5°C
- 12- 1013.25 13- determine the possible day weather 14- 37
- 15- ultraviolet radiation - two oxygen atoms - oxygen atoms
- 16- far, medium and far 17- cancelled 18- cancelled
- 19- Cancelled 20- cancelled
- 21- a) oxygen - oxygen b) oxygen molecule
- 22- CFCs - Methyl bromide gas - Halons
- 23- methyl bromide gas 24- visible light and short waved rays
- 25- cancelled
- 26- the continuous increase in the average temperature of the Earth's near surface air. 27- 1×10^{-9}
- 28- visible light and short waved rays 29- cancelled
- 30- sedimentary rocks 31- formation 32- snow
- 33- immediately - decomposition
- 34- last - whole shape, hair, flesh, and food in its bowel
- 35- pine trees - old 36- mold 37- life - sea - land
- 38- age - petroleum
- 39- the number - a certain - compensation - die out
- 40- cancelled 41- cancelled 42- cancelled
- 43-

Atmospheric layer	Its order	Its thickness	Its content
1- Mesosphere.....	3 rd	35 km	Limited quantities of helium and hydrogen gases only
2- The stratosphere	2 nd	37 km	Ozone layer
3- Thermosphere	3 th	590km	Ionosphere





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True or false

C-

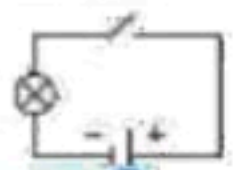
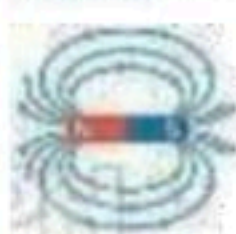
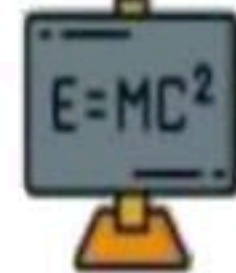
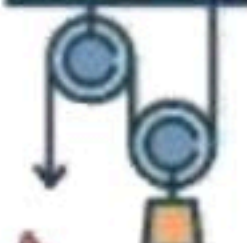
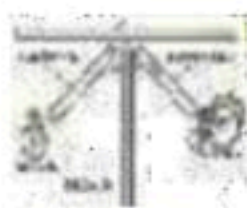
- | | | | | | |
|----------|--------------|----------|--------------|----------|----------|
| 1- True | 2-False | 3-False | 4-False | 5-True | 6-True |
| 7- True | 8-True | 9-False | 10-True | 11-True | 12-False |
| 13-False | 14-False | 15-False | 16-True | 17-True | 18-False |
| 19-True | 20-False | 21-True | 22-True | 23-False | 24-True |
| 25-True | 26-True | 27-True | 28-False | 29-False | 30-True |
| 31-False | 32-True | 33-True | 34-True | 35-False | 36-True |
| 37-False | 38-Cancelled | 39-False | 40-True | 41-True | |
| 42-True | 43-False | 44-False | 45-Cancelled | 46-True | |
| 47-True | 48-Cancelled | 49-True | | | |

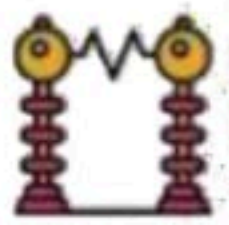
Correct

- D) 1- Mosely 2- Bohr 3-Atomic number 4- cancelled
 5- Inert gas 6- 7A 7- acidic oxides 8- cancelled
 9- Mammouth 10- Amber 11- Cast 12- during its life
 13- mold 14- fossils 15- index 16- Coral
 17- hot, rainy and tropical 18- cancelled
 Dinosaur and Mammouth 20- Dodo Bird and Quagga
 21- Dodo Bird 22- cancelled 23-Natural protectorates

Scientific term

- E- 1-Mendeleev's Table 2-Mosely's table 3-Periods
 4-Group 5-Energy levels 6-Energy Sublevels
 7-Transition Elements 8-P- Block 9-D-Block
 10-Electronegativity 11-Amphoteric oxides 12-Metals
 13-Non-Metals 14-7A (Halogens) 15-B-block
 16-Mesopause 17-Thermosphere 18-Altimeter
 19-Troposphere 20-Van Allen Belts 21-Aurora Phenomenon
 22-Mesosphere 23-Exosphere 24-Greenhouse phenomenon
 25-Ozone Gas 26-Cancelled 27-Ultraviolet rays





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- 28-Fossils 29-Trace fossils 30-Remain fossils
 31-Petrification Process 32-Index Fossils 33-Fossil record
 34-Extinction 35-Overhunting 36-Food chain
 37-Simple ecosystem 38-Complicated ecosystem
 39-Natural protectorates

Match

H)

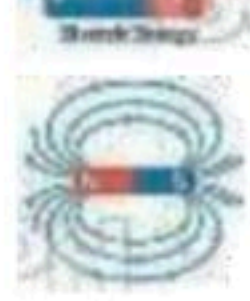
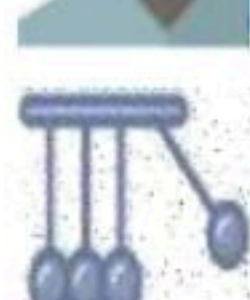
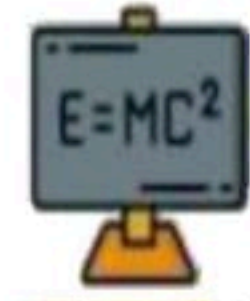
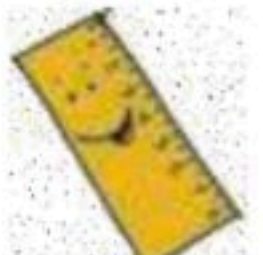
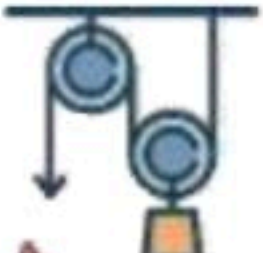
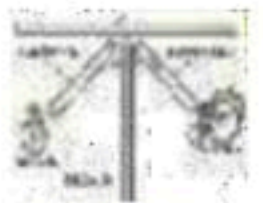
- 1- 1-c 2-a 3-e 4-b 5-d 6-f
 2- 1-d 2-a 3-b 4-c
 3- 1-b 2-a 3-d 4- cancelled

Essay Questions

Give reason

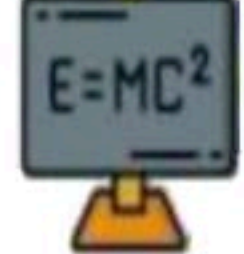
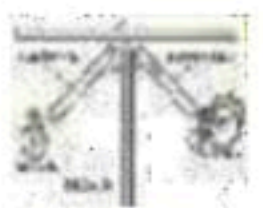
A)

- 1- Because it has the smallest atomic size and largest electronegativity
- 2- Because it has the largest atomic size
- 3- Because it dissolve in water producing acidic solution
- 4- Because it dissolve in water producing basic (alkaline) solution
- 5- Because it reacts with acids as basic oxide and reacts with basis as acidic oxide
- 6- Because the atomic weight = number of electrons + number of neutrons
- 7- Cancelled
- 8- Due to difference in number of the electrons in their outermost energy level.
- 9- Because Troposphere contains 75% of the mass of atmospheric envelop.
- 10- Because it reflects radio waves transmitted by radio stations and communication centers.
- 11- Due to scattering of harmful charged cosmic radiations away from the Earth.



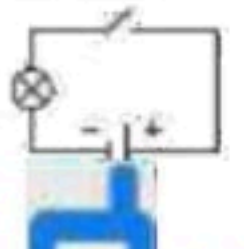
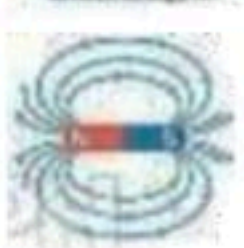
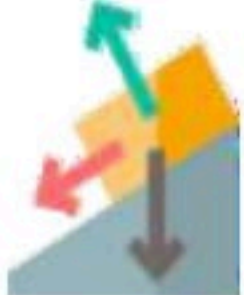


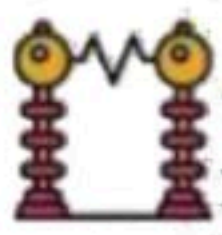
- 12- Because it contains charged ions.
- 13- Because due to absorption of ultraviolet rays by ozone layer present in upper layer.
- 14- Due to increasing the pollutants of ozone layer.
- 15- Because it absorbs harmful ultraviolet rays coming from the sun.
- 16- Due to burning of fossil fuel, cutting trees and forest fires.
- 17- Because they cause erosion of ozone layer
- 18- Because they give us details about the life of once an old plant.
- 19- Because it preserves small organisms (like insects) inside it from decomposition.
- 20- Cancelled
- 21- Because of the rarity of alternative that compensates this absence.
- 22- Because overhunting causes extinction.
- 23- Cancelled
- 24- Due to its reduced size wings, so it was a non-flying bird.
- 25- Cancelled
- 26- To protect the endangered species.
- 27- Cancelled



What happens

- B)
- 1- Magnesium oxide is formed $\text{Mg} + 2\text{HCl} \rightarrow \text{MgCl}_2 + \text{H}_2$
- 2- It turns blue
- 3- It turns red
- 4- Cancelled
- 5- The bond in water molecule become pure covalent bond
- 6- The water molecules are collected by hydrogen bonds forming large-sized hexagonal crystals with many spaces between them. So ice floats on the surface of water.
- 7- Cancelled
- 8- Cancelled





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9- The acidified water decomposes into oxygen gas at the anode and hydrogen gas at the cathode.

10- This causes chemical pollution of water.

11- The bodies of insects are preserved inside it from decomposition.

12- A solid mold ammonite fossil is formed carrying the internal details.

13- A cast of shell is formed carrying the external details of its shell.

14- Increasing the overhunting which exposes many species of living organisms to extinction.

15- Cancelled

16- It causes a cavity in the food chains that will disturb the balance of ecosystem.

17- Cancelled

18- Cancelled

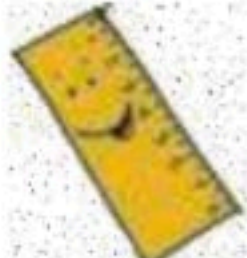
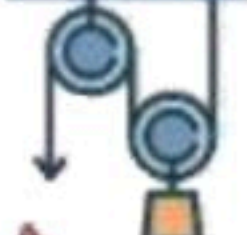
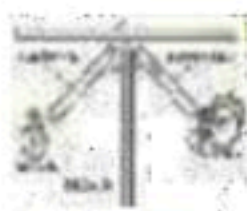
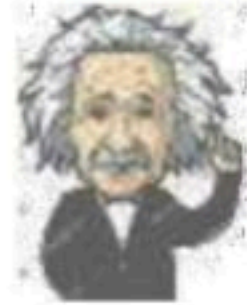
Compare

C)

1- Cancelled

2- Period	Group
<ul style="list-style-type: none"> - It includes elements of different properties. - Its elements have the same number of energy levels. - By increasing the atomic number for its elements : <ul style="list-style-type: none"> • The atomic size decreases. • The electronegativity increases. • The metallic property decreases till we reach metalloid, then the nonmetallic property increases. 	<ul style="list-style-type: none"> - It includes elements of similar properties. - Its elements have the same number of electrons in the outermost energy level. - By increasing the atomic number for its elements : <ul style="list-style-type: none"> • The atomic size increases. • The electronegativity decreases. • The metallic property increases "in groups which start with metal" • The nonmetallic property decreases "in groups which start with nonmetal"

3- Cancelled





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4-

	Altimeter	Aneroid
Usage	Used by pilot in airplanes to measure the elevation from sea level based on the atmospheric pressure at this level.	It is used to determine the possible day weather.

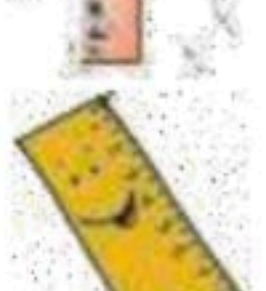
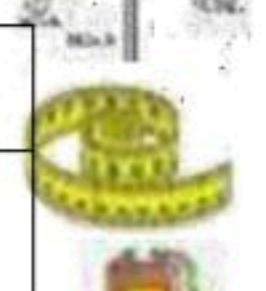
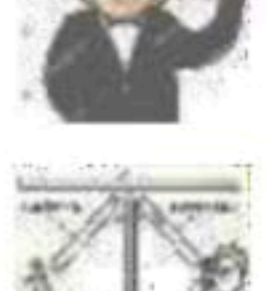
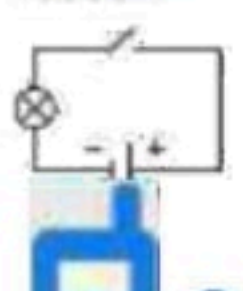
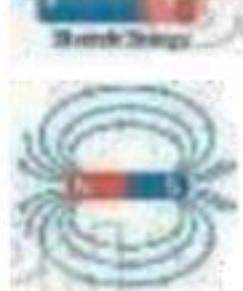
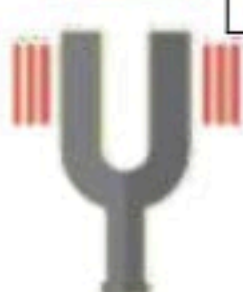
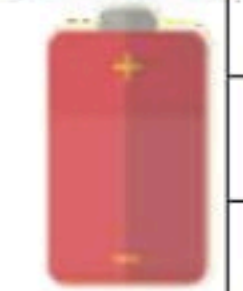
5-

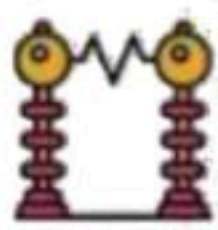
	Troposphere	Ionosphere
Atmospheric pressure	100 mb	0.001 mb
Temperature	-60°C	1200 °C

6-

	Mesosphere	Thermosphere
Atmospheric pressure	0.01 mb	0.001 mb
Temperature	-90°C	1200°C

7-	Atmospheric Pressure	Atmospheric envelop
Definition	It is the weight of air column of an atmospheric height on a unit area (1m ²).	It is a gaseous envelope surrounds the earth and rotates with it about its axis, and extends 1000 km above sea level.





Mention the difference

D) 1-

	Cast	Trace
Definition	It is the replica of the original external shape or outer shell of an old living organism.	They are fossils that indicate the activity of old living organisms during life

2-

	Mammoth Fossil	Amber Fossil
Formation	It died and rapidly buried in snow that preserved it from decomposition	Insects were covered by resinous matter secreted by pine trees in old geologic ages

3-

	Ferns Fossils	Coral Fossils
Paleo environment Indicated	Hot, rainy and tropical environment.	Warm, clear and shallow seas

4-

	Nummulites fossil	Foraminifera Fossil
Importance	Indicate that the environment was a part of a sea floor	Indicate the suitable conditions for petroleum formation

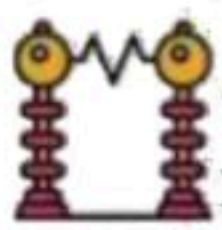
5-

	Simple ecosystem	Complicated ecosystem
Members	Few members	Multiple members
Effect of Extinction	Severely affected by the absence of one species because of the rarity of alternatives that compensates this absence.	It is not affected much by the absence of a species because it has many alternatives.
Examples	The Desert ecosystem.	The Tropical ecosystem.

6-

Ras Mohammed Protectorate	Wadi Al-Hetan Protectorate
It contains rare species of coral reefs and coloured fish	It contains complete whale fossils 40 million years ago.





Importance

F)

- 1- They play an important role in scattering harmful charged cosmic radiation coming from space.
- 2- It protect the earth by absorbing harmful ultraviolet rays emitted from the sun.
- 3- Used by pilot in airplanes to measure the elevation from sea level based on the atmospheric pressure at this level.
- 4- Because it contains ozone layer which absorbs harmful ultraviolet rays emitted from the sun and it is suitable for flying planes.
- 5- It reflects radio waves transmitted by radio stations and communication centers.
- 6- It contains satellites which orbit around the Earth
- 7- They are used to transmit weather condition information and TV programs.
- 8- It is used to determine the possible day weather.
- 9- Meteors are formed in this layer and burnt due to the friction with air molecules.

Mention one example

G)

- 1- Dinosaur footprint - worm tunnels
- 2- Nummulite - Ammonite - Trilobite
- 3- Cast of ferns - fish cast
- 4- Mammoth fossil - Insect in Amber fossil
- 5- Dinosaur Teeth - Dinosaur eggs - petrified woods.
- 6- Foraminifera - radiolaria
- 6- Ibis Bird
- 7- Papyrus plant
- 8- Dodo bird
- 9- Cancelled
- 10- Cancelled

